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ORIGINAL ARTICLES.

METHODS OF DIAGNOSIS AND THERAPEUTICS OF DISEASES OF THE STOMACH AND INTESTINES.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY FENTON B. TURCK, M.D.
CHICAGO.

Diagnosis based upon a group of symptoms only is of little significance in determining pathologic conditions, and, therefore, is of no decided value in rational therapeutics. However, symptoms and history must not be ignored. When a group of symptoms present themselves with a history pointing to a gastric disorder, we must depend upon direct examination to complete a diagnosis.

It has always been my custom to make a general physical examination for the purpose of establishing a diagnosis in gastric diseases. I begin with the hair, continue with the eyes, nose, mouth and skin, the general appearance of the body, and especially the contour and configuration of the abdomen. I use boundary lines which connect fixed points: the median line from the interclavicular notch to the symphysis pubis; the parasternal lines (parallel to the median) from the junction of the middle and inner third of the clavicle, to Poupart's ligament; a line connecting the apices of the twelfth ribs; another from the xyphoid appendix to the twelfth rib (on both sides); a transverse line connecting the anterior superior spines of the ilia.

After examining the chest organs, we locate the solid organs of the abdomen—liver and spleen—by the usual methods. Then the size, position and location of the hollow viscera are determined. The usual method of percussion in locating hollow viscera often lead to grave errors, since the stomach may contain food and the transverse colon may be filled with fecal matter, so that the flat percussion may run far below the lower border of the great curvature. If, on the other hand, the stomach is empty and contains gases, and the colon is well dilated and inflated, these conditions may lead to similar errors. The method devised by v. Frerichs and also employed by v. Ziemssen of producing CO_2 with bicarbonate of soda and tartaric acid is now of historic value only. Ewald's method of introducing air through the stomach tube is reliable in cases in which the colon can be outlined definitely. To overcome the difficulty of outlining the colon, Ewald recommends the introduction of water into the colon. This is often impracticable and for obvious reasons can not always be depended upon.

Various instruments have been devised for locating the stomach, for determining its size and outline, especially that of the greater curvature, and for ascertaining its motility and degree of sensibility on pressure. For determining the degree of pain, especially that found in gastric ulcer, Boas has devised an ingenious method by using what he calls the algesic meter. This consists of a cylinder containing a spring with an indicator graduated in 10 kg. When pressed upon the xyphoid appendix or twelfth dorsal vertebra, it indicates the degree of pressure a person can endure in normal condition. When only from 3½ to 5 kg. of pressure can be endured, it is considered abnormal and arouses suspicion of gastric ulcer.

Einhorn's gastro-diaphane is an electric light which is introduced into the stomach for the purpose of transillumination. It has been found very valuable in determining gastroptosis, simple dilatation and the rare cases of tumors and cicatrices on the anterior wall.

Einhorn also devised an instrument for determining the motility of the stomach. The electric gastrograph, as it is called, is described in the New York *Medical Journal*, September, 1894.

The gastric motor-meter is an apparatus I have devised for determining the contractility and the movements of the stomach. It indicates: 1, the character of the movements—respiratory (passive), or peristaltic (active); 2, the number of movements; 3, the degree of energy of the movements. It consists of a small rubber tube, to one end of which is attached a small oblong rubber bag. When this bag is inflated, it is pear-shaped, and about three inches long with two inches at its greatest diameter. Bags of various sizes may be filled with air or water. The other end of the rubber tube is connected with a Schiel's manometer with water as an indicator. The collapsed bag is introduced into the stomach, inflated with air and connected with the manometer; the rise and fall of the manometer indicate the long respiratory movements and the short peristaltic waves. The small tube of the manometer shows a rise of 30 mm. during ordinary respiration; in deep respiratory movements there is a rise of 200 mm. or more. The peristaltic contractions in health vary from 10 to 15 mm.; in dilatation from 2 to 5 mm.

The fact that respiratory movements affect the pressure on the bag, showing a rise during inspiration and a fall during expiration, is of great significance. From these observations I would conclude that respiratory movements have the most marked effect on the mechanical movements of the stomach contents. The gastric unit is obtained from examinations and observations made on the stomachs of healthy persons. It is found that normal stomachs show 200 to 300 mm. (water) of pressure, produced by the contraction of the stomach and the respiratory movements. From this we can make an exact mathematical formula of the motor power of the stomach.

The contractility and dilatation of the stomach

may also be determined by means of cables of various degrees of flexibility used with the gyromele.[1] The stiff cables, after having been introduced into the stomach and allowed to glide along the great curvature, distend the stomach, while the more flexible cables will not stretch it. The difference between the two indicates the degree of contractility and dilatation. The revolutions of the sponge within the stomach can be readily palpated on the abdominal wall.

The gyromele is not only useful for exploring the stomach, but by attaching the ordinary esophageal ivory bulbs, it can be used to locate strictures anywhere along the esophagus to the cardia. The flexible cable being encased in a rubber tube is less dangerous than the stiff short whalebone formerly used for exploring purposes, which was not at all adequate and always involved danger of puncturing,

We use the gyromele for the purpose of removing adherent material from the walls of the stomach, for microscopic, chemic and bacteriologic examination.

Microscopic examination will reveal epithelial cells of glands, round cells, leucocytes, bacteria of various forms, either in colonies or otherwise. When colonies are found, it shows that there is an active bacterial growth, and a further bacteriologic study is necessary to determine the microörganisms which are present in gastritis.

Chemic examination can be roughly made during the progress of treatment, as, for example, to determine the return of HCl. Dr. Wesener[2] has just finished a line of very interesting experiments in cases of anacidity of the stomach. He has examined the stomach contents of patients after Ewald's test meal and found no HCl. The patients are then asked to return to the clinic with an empty stomach. No HCl being present the stomach is washed out to remove any other acids that may be present. The gyromele is introduced and revolutions are made for five minutes. On chemic analysis in a number of experiments HCl was found to be present as high as .1 per cent. This shows that HCl is secreted on stimulation. I have made use of this fact in establishing a differential diagnosis between functional disturbance and atrophy of the stomach. In simple functional disturbances HCl is produced after the revolutions of the gyromele, while it is not found in atrophy.

After we have determined the size, location and motor power of the stomach and the chemistry of the stomach contents, we make a simple bacteriologic examination. To determine the character of the infection a more extensive and accurate bacteriologic examination is necessary. By simply removing the contents and examining them, we can obtain no exact knowledge of the varieties of bacteria which are characteristic of the disease. The material must be taken from the walls of the stomach. This is done by means of the gyromele. Cultures are then made, preferably by the method of developing microörganisms on the mucous membrane of the stomachs of pigs: 1, this medium approximates a more natural soil for the growth of the microörganisms which are especially found in gastritis; 2, it produces a more luxuriant growth of colonies in less time; 3, colonies can be preserved *in situ*, the mucous membrane being dried and preserved as parchment.

In carcinoma I have found lactic acid microörganisms to be more prevalent than in any other disease of the stomach. Their presence in carcinoma of the stomach is so constant as to make it of great importance in the early diagnosis of carcinoma of the stomach. (See JOURNAL AMERICAN MEDICAL ASSOCIATION of March, 1895; Turck, on "Early Diagnosis of Carcinoma of the Stomach.")

THERAPEUTICS.

Having reviewed the various methods of diagnosis, we will now consider the rational therapeutics that would result from an accurate and complete examination of pathologic conditions.

Lavage of the stomach has been universally used for a number of diseases and is especially indicated in dilatation. In a large percentage of cases, however, where lavage has been practiced, the removal of the stomach contents instead of improving the condition has caused rapid emaciation, on account of the withdrawal of nutritious material, and the dilatation has been increased by the weight of the water. Indications for lavage are limited to selected cases of dilatation.

Massage in the recumbent position has been recommended by both Cseri and Boas, as it empties the stomach and overcomes the objection of withdrawing nutritious material and weighing down the stomach. However, this manipulation does not remove the material adherent to the walls of the stomach, in which are lodged the microörganisms, which form a very important pathologic factor in gastritis. The indications in these cases are:

1. To remove the adherent material.

2. To disinfect as far as possible, or to render the soil unfavorable for the development and growth of microörganisms.

If the stomach has been washed out until the water runs clear, it is observed after the gyromele has been introduced with three to five minutes' revolution that the contents then withdrawn contain thick tenacious masses, in which are found necrosed epithelial cells, cells from the mouth and esophagus, leucocytes and detritus of food swarming with colonies of different varieties of microörganisms. The removal of this irritative material is still further facilitated by the use of soap solution made by dissolving one ounce of green soap in one quart of water. It has also been observed that in cases where there has been anacidity the HCl would reappear after this treatment, and in cases of hyperacidity which might be due to the irritation caused by the microörganisms, this condition was alleviated.

Furthermore, the motor power which had become abnormal, would resume its normal activity. This method with its results was first presented before the International Medical Congress at Rome in 1894.

I now present a method of disinfecting the mucous membrane which I have demonstrated in the laboratory. This method has been used for the past year and has been satisfactorily proved to check the growth of colonies on the mucous membrane. It consists of nebulizing oil of cloves and oil of cinnamon with a simple nebulizer, so that a cloud of pure essential oils is formed. The apparatus I have devised for applying this coating

[1] The uses of the gyromele (revolving sound) was first presented before the International Congress at Rome in 1894, with report of cases. It was also described, with additional cases in the Wiener Med. Woch., Nos. 1 and 2, 1895. It consists of a flexible cable to the end of which is attached a sponge covering a spiral spring which can be removed and changed. The cable passes through a rubber tube and this again is attached to a revolving apparatus for the purpose of producing revolutions of the sponge within the stomach.

[2] Proceedings Illinois State Medical Society, 1895.

to the wall of the stomach consists of a nebulizing bottle, connected with a Wolf bottle; this is in turn connected with a tube, on the side of which is attached a smaller tube, made in one piece with it. The inlet tube extends into the stomach; the outlet or shorter tube extends only to the cardia. The extra bottle prevents the contents of the stomach from entering the nebulizing bottle. The advantage of nebulized oil over aqueous spray is that it remains in contact with the mucous membrane for a longer time. I have also demonstrated experimentally that a thin layer is applied to the whole surface of the stomach. I recently made the following interesting observation: a patient complains of an intolerable sensation of hunger; after the nebulizer has been applied, the sensation disappears and the patient feels very comfortable.

Besides these oils, any substance soluble in glycerin may be used: silver nitrate dissolved in small quantities of water, potassium bichromate (1 per cent. solution can be used with glycerin); a weak solution of formalin. The nebulizer is applied for three minutes. The advantages of oil of cloves and oil of cinnamon in the nebulizer are:

1. It is antiseptic.

2. It prevents the growth of microörganisms. (See experiments in laboratory.)

3. It is analgesic; pain ceases immediately after application, viz., gastralgia.

4. It is a vasomotor stimulant; it assists in removing congestion; a feeling of warmth and well being is experienced by the patient after the application.

5. The introduction of air distends the stomach, and contraction forces the air out through the other tube, so that we have a pneumatic massage.

For cleaning the stomach, I use an apparatus which consists of a double tube; a small short tube with a perforated ball at the end to be introduced into the stomach; a larger tube for the immediate return of the water introduced. The water is forced through the small short tube under pressure and returns through the large tube. This procedure will remove material from the walls, especially if soap is used. The apparatus possesses a great advantage over lavage, as it will simply remove loose material in the lumen.

Among other advantages of this process of cleansing the stomach may be mentioned: in cases of dilatation, the large quantity of water which is necessary to wash out the stomach only aggravates the already prolapsed condition and distension of the stomach. To overcome this objection, Fleiner recommends lavage in the recumbent position. In using the apparatus I have described, the water returns immediately through the large tube, so that it is impossible to overload or distend the stomach. Not only does this apparatus cleanse the stomach, but it also acts as a needle-douche, and as such is a vasomotor stimulant. It has been used with remarkable results for the last year in cases of pronounced gastroptosis and dilatation, restoring the latent muscle and sluggish vessels to their normal condition.

Before this treatment, soap and water or one-half of 1 per cent. of formalin, or thymol, or resorcin, or oil of cloves is introduced through a syringe with the gyromele. As before stated, liquid soap is made by dissolving an ounce of green soap in one quart of water and is especially valuable in removing irritative material from the walls of the stomach, as well as cleaning the mucous membrane and neutralizing acids.

Lysol, 30 minims, to 1 liter of water with the liquid soap is a valuable antiseptic solution. It is useless, however, to apply antiseptics before the stomach has been thoroughly cleansed.

GENERAL THERAPEUTICS.

Congestion of the stomach and abdominal viscera is shown by cold hands and feet and the peculiar color of the fingers and lips. To distribute the blood over the body and remove the contraction of the arterioles, the following bath (described in *Wiener Med. Wochnschr.*, No. 2, 1895) is used: the patient is placed in a common salt bath at 100 degrees F. and requested to lie quiet. The temperature is raised 110 to 112 degrees F., in some cases to 116 degrees F., until the whole surface of the body has turned red. The patient is then removed from the bath and massaged all over the body with a cake of ice. This stimulates the vasomotor nerves and increases the heart's action. A stream of ice water containing a little ammonia is directed to the body of the patient. A large horse syringe or pump is used in applying the stream. The procedure is similar to a Scotch douche.

ADVANTAGES OF THE BATH.

1. It increases the metabolism of the body, producing general activity.

2. It effects the removal of toxins.

3. It promotes the supply of fresh arterial blood to the tissues.

The stimulation lasts from six to twenty-four hours, according to the case. General improvement ensues immediately, as the bath has no weakening effect.

A bath is given every day during the first week; then three times a week until the general condition of the body has improved. Counter-indication: mitral regurgitation without compensation and fatty degeneration of the heart.

TREATMENT OF THE INTESTINES.

For the purpose of lessening putrefaction in the intestines, a pill is made, containing oil of cloves and oil of cinnamon, and in some cases ox-gall; this is coated with several layers of shellac and betol. The coating is not dissolved in the stomach and the pill passes into the intestines where it is set free. Remarkable clinical results have been obtained in some obstinate cases of diarrhea by the use of these pills.

Cases of dilated sigmoid and atony of the lower bowel and severe cases of constipation have been overcome through the use of the gyromele with revolution. Where there is marked congestion of the colon, atony of the colon, and retention of fecal matter, I have introduced ice water through a soft rubber tube. The patient lies with hips elevated; the ice water is introduced and then massaged out through the tube after it has been disconnected from the reservoir which is placed five feet above the patient.

ADVANTAGES OF USING ICE WATER.

1. It stimulates the vessels; and

2. Increases the muscular action of the colon.

Lavage of the colon with warm water simply washes out the mucus, which should be retained in certain cases for the purpose of lubrication. Its removal aggravates the symptoms of constipation.

Two quarts of ice water are generally used to which in some cases tannic acid may added; also lysol, one ounce to one quart of water; liquid soap; inspissated ox-gall to one quart of water.

Constipation is also much improved by eating bran gems three times a day with meals. Common bran from the feed store is used in making these.

ADVANTAGES OF BRAN GEMS.

1. They mix with the food and assist in the churning process.

2. They furnish material for stimulation to the whole intestinal tract.

3. They do not furnish a nutrient medium for the growth of microörganisms.

Boas recommends the use of two teaspoonfuls of milk sugar at night to overcome constipation. This, however, has been found inadequate. Treatment by dietetics, the use of bran lavage of the colon with ice water, the use of the gyromele as described, with the addition of faradization as recommended by Ewald, have given very satisfactory results.

MECHANICAL THERAPEUTICS.

In many cases of gastric disease, the abdominal walls are relaxed, so that they allow the protrusion of the abdominal organs, presenting the appearance known as Glenard's disease. The common abdominal belt is not sufficient to hold up the abdominal wall, as it simply presses the organs backward. I therefore utilize the usual web abdominal belt, to which I have affixed lifting straps. The lower strap is drawn first. It is fixed just above the pubis, passes through loops on each side and runs upward and backward and is buckled to the support at the back. A second strap is attached above this and also brought to the support at the back. This elevates the viscera and keeps them in place. However, this is not sufficient, as it will not cause hyperplasia of the abdominal muscles which is necessary to hold up the viscera. For the purpose of producing hyperplasia I use Gaertner's ergostat. This apparatus is something like a grinding-stone. The patient turns a wheel with friction brake, which is weighted to suit different cases. I have devised a method of using the abdominal muscles by extending the arms and legs perfectly straight, thus throwing the work mostly on the trunk and giving exercise to the abdominal muscles. Deep breathing exercises, arm extension, backward bending, side-twisting are the movements performed. During all the exercises the legs must remain extended, so as to throw the work on the trunk as much as possible. The best physiologic effect is obtained by exercising slowly. Respiratory exercises are the best for the stomach, since they produce stomach movements.

DISCUSSION.

DR. STOCKTON—I am not willing to allow this very interesting paper to pass without discussion. The Doctor has taken up so many points that he has not been able to give to some of them the attention which he would like to give and which he will undoubtedly complete in further contributions. He has suggested a great variety of thoughts. The contributions that he has made to the treatment of gastric diseases are certainly very ingenious and very interesting. He has spoken of the function of the instrument which he calls the gyromele which seems like a very interesting instrument. The Doctor speaks of the use of that in differentiating between the functional acidity and gastric disturbance. I can not quite agree with him as to that point. We have various degrees of anacidity. There are many cases of functional anacidity, without, to my mind, demonstrable lesion of the mucous membrane where even marked irritation by electrical currents, or other local stimulants in the form of drugs, seem not to produce local symptoms. Occasionally we do find an acid secretion. As to the limitation of lavage, there can be no doubt that lavage, like every other new procedure, has spread widely into popular use for obvious reasons, but has been overdone. It is used where it is quite improper, and without any depth of purpose in view. I congratulate the Doctor upon calling attention to the uselessness of lavage in many conditions, and in cutting down its use to merely emptying the stomach in a therapeutic sense. Finally, may I ask him to explain a little more definitely about the coating of the pills to which he referred, so that we can know exactly how it can be obtained, or how we can get this coating. The ordinary pills which pass the stomach untouched are very prone to pass the intestines untouched.

DR. TURCK—The statements that this revolving apparatus does relieve functional disturbance and stimulates the formation of hydrochloric acid were quite as surprising to me as they are to the Doctor now. This work was accomplished by Dr. Wesener, who is with me in the clinic work, and a large number of cases were examined. We found by all the other means that we could not in any way produce any hydrochloric acid. The introduction of drugs is not sufficient; you can give any amount of hydrochloric acid, nux vomica or faradization, but there would be no amount whatever found in the stomach. The introduction of the revolving apparatus for five minutes would start up a circulation, and at once stimulate all the glandular elements of the organ, because you reach the whole of the stomach. I have been able to apply materials in the entire organ in that manner, and demonstrate it upon animals. As to lavage, about four years ago I used to think that lavage was a great thing, but we would find that some of the cases became thinner under its use. In fact, many of our cases would become rapidly emaciated. At first we thought it was because of the loss of the food which was washed away, and many would come with an empty stomach, and we washed out the secretions. The simple washing out of the stomach is not sufficient in gastric disturbances. In cases of dilatation the removal of the irritating material is quite useful. But it seems apparent that the secretions which are removed by the use of lavage are essential to the system, and that their abstraction results in nutritive loss. As to the pills, Dr. Rode, of Chicago, has made those pills. Several coats of shellac and betol were found to be necessary. The pills were dipped into the fluid, and then taken out and allowed to dry, and then this was repeated over and over again. These pills were found to pass through the stomach into the intestine, without being absorbed in the stomach and contents set free in the intestine.

NOTE.—All the apparatus mentioned in this article can be had of Tieman & Co., New York; Hausman & Dunn, Sharp & Smith, or Truax, Greene & Co., Chicago.

THE DIFFERENTIAL DIAGNOSIS OF CHOLELITHIASIS.

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BY GEORGE W. WEBSTER, M.D.

PROFESSOR OF PHYSICAL DIAGNOSIS, NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, CHICAGO.

General Statement.—Gall stones were observed by Johann Kentman in 1565. They occur at all ages, having been observed in the newborn infant. Ten per cent. of all adult males,[1] 25 per cent. of all adult females[2] and 36 per cent. of the insane[3] have gall stones. Schroeder of the Strassburg Hospital, says they are found in 4.4 per cent. of all males and in 20.6 of all females, especially if they have borne children. The number varies from a single stone to over eight thousand.[4] Symptoms are observed in 1 per cent. of those having gall stones. As the surgery of the gall tracts is brilliantly successful and inasmuch as solution of the stones is an illusion, and removal by medicines is seldom successful, an early and correct diagnosis is important, that we may turn them over to a surgeon whom they should consult, in

order that they may have a chance for recovery. Send them to a surgical clinic and not to Carlsbad.

Diagnosis.—In the differential diagnosis of cholelithiasis it will facilitate our thinking about the matter if we divide the cases into two classes, placing in the first class those in which there is stone in the cystic duct, or in the gall bladder, describing the signs and symptoms and considering also those affections with which it is liable to be confused.

In the second class we place all those cases of stone in the common duct. The latter are always accompanied by more or less jaundice, while in the former, for very obvious reasons, jaundice is absent. We should not forget, however, that in a given case it may, in the early stages, belong to the first class, while the stone is still in the cystic duct, and that it may subsequently pass on into the common duct, and give rise to all the characteristic phenomena of obstruction at that point.

As already stated, the fact that 10 per cent. of all males and 25 per cent. of all females have gall stones, while only 1 per cent. of all these have symptoms, makes it evident that we are to concern ourselves only with those cases which manifest symptoms of stone in the gall bladder or in the cystic duct. The diagnosis is sometimes easy and at other times it is exceedingly difficult. The most characteristic symptom is the colic which consists of an acute, severe pain coming on a few hours after a meal, at the time when the food is passing through the duodenum. It is usually felt in the right hypochondrium or in the epigastric region, is commonly sudden in onset, and varies from a feeling of uneasiness and discomfort, to one of such extreme agony that it becomes unbearable and convulsions may occur.

The duration and intensity of the attack are varied by the size and situation of the stone, or stones, the age of the individual, the posture of the patient, lying on the belly often relieving the pain, the course of the stone whether dropping back into gall bladder or passing on into the common duct, and lastly, intensity of the nausea and vomiting. Probably the extreme relaxation allows the stone to fall back, pass on, or permits the bile to flow by or else relaxes the spasm of the muscles of the duct. The pain may last from a few minutes to a week. Southworth says[5] that histology has demonstrated that in youth the muscular fibers are abundant in the walls of the duct, while in old age they have either atrophied or disappeared. This is denied by Strumpell. This would explain the variation in intensity and duration of the pain which is probably caused by the spasmodic contraction of the muscular fibers upon the passing or impacted stone.

The accompanying symptoms are chills, fever as high as 104 degrees F., profuse sweats, but without distinct regular periodicity. The pulse is frequent, small, soft, the face pale, bathed in a profuse sweat, there may be a condition of collapse and reflex cramps may occur in the legs, arms, etc.

Physical Examination.—It may be laid down as a general proposition that dilatation of the gall bladder is common and that atrophy of the gall bladder is uncommon where there is any obstruction of the cystic duct from stone in the gall bladder. On the other hand, atrophy is the rule where there is movable stone in the common duct. The gall bladder may vary from the normal size to that of a large tumor reaching to the pelvis. When there is a palpable tumor it will be found to descend with inspiration, is continuous with the liver, describes the arc of a circle, the center of which is beneath the right lobe of the liver,[6] is not as freely movable as a movable kidney. In rare cases, the rubbing of the stones in the gall bladder may be felt by the palpating finger. When in addition to the tumor, the kidney may also be palpated this serves to distinguish them. In rare cases the grating sound may be heard upon auscultation, and still more rarely, a friction fremitus from a localized peritonitis may be elicited by the same method of examination. During the attacks there is tenderness over the region of the gall bladder. When, in addition to the foregoing, the stones are found in the feces, it amounts to an absolute demonstration. The occurrence of jaundice makes it almost equally certain. It is to be borne in mind, however, that gall stones may remain in the bowels for many days, and also what is far more important, that not finding them in the stools is only negative evidence, as it has been shown experimentally[7] that when gall stones are swallowed, they may be dissolved in the alimentary canal and do not reappear in the feces. Exploratory puncture needs to be mentioned only to be condemned as criminal.

The mode of termination of an attack may be either by the falling of the stone back into the gall bladder, it may pass on into the intestines, or it may become impacted in the common duct. The intervals between the attacks vary from a few days to many years. A stone in the gall bladder may be passed and, no others forming, there is no recurrence of the colic. On the other hand, when there is a movable stone in the common duct one of the characteristic evidences is frequent recurrence, perhaps every few days. Lastly, with stone in the gall bladder or in the cystic duct, there is an entire absence of the characteristic signs and symptoms of stone in the common duct. It will readily be seen that, while the diagnosis is easy in the typical case, it might readily be confused with lead colic, malaria, renal colic, peritonitis or gastralgia. The following points ought to serve in distinguishing them:

Lead Colic.—This may commonly be easily differentiated, because, in addition to the colic, there is nearly always some of the other manifestations of plumbism. We should consider the occupation, water supply, food, cosmetics, etc. Among the other evidences are blue lines along the gums, lead may be found in the urine after the administration of the iodid of potassium, there may be dropped wrist and obstinate constipation. In addition to these more common evidences there is anemia, there may be multiple neuritis, with sensory and motor derangements, and cardio-vascular-renal changes are common.

Malaria.—The chills and fever followed by profuse sweats which occur in cholangitis or cholecystitis may be differentiated by bearing in mind that in malaria the chills are distinctly periodical, the spleen is enlarged, the complexion is sometimes characteristic and, lastly, the plasmodium of Laveran will be found in the blood.

Renal Colic.—In renal colic the pain is more likely to start in the lumbar region, extend forward, thence downward along the inside of the thigh and also to the testicle in the male, causing its retraction. There will be present vesical tenesmus, tenderness over the kidney, blood and pus in the urine, absence of bile

in it, and the feces will be normal in color. If the kidney be movable and enlarged it may be grasped between the two hands and will not descend with inspiration, is freely movable and may be replaced in its normal position, and the colon usually lies in front of it. It goes without saying that it is only in disease of the right kidney that any confusion can arise. Tumor in the region of the gall bladder may be due to carcinoma of the head of the pancreas, echinococcus cyst, fecal impaction, renal tumor or movable kidney.

Peritonitis.—While there is a remote possibility of peritonitis and hepatic colic being confounded, yet the association of the former with nephritis, typhoid fever, dysentery, tuberculosis, appendicitis, infectious diseases and trauma, the hard, small, tense pulse, drawn face, shallow thoracic respiration, tympanitis, vomiting, etc., should leave no doubt in the mind as to the true nature of the affection.

Gastralgia.—Pain in the stomach is due to irritation of the sensory fibers of the vagus, either in its terminal filaments or nucleus, or in reflexion from higher centers. Thus the causes may be numerous, the manifestation uniform. The attacks of pain may closely simulate an attack of gall stone colic. Indeed, I have no doubt that many of the cases diagnosed as gastralgia are hepatic colic. The following points should be borne in mind: that not uncommon class of cases where the gastric crises are among the earliest manifestations of tabes as first described by Charcot. The other evidences of this disease of the cord would enable us to make a correct diagnosis. Then there are the hysterical gastralgias where the detection of the hysteria enables us tc recognize the true nature of the affection. The gastralgia of neurasthenia will be associated with other evidences of the neurasthenic condition. In all the foregoing, there is no fevor, no palpable tumor, the onset of pain has no reference to food or time of day, there is no change in the taste in the mouth, no gall stones are found in the feces, and lastly, they never end in an attack of jaundice with the characteristic changes in skin, pulse, urine, feces, blood, etc.

It seems probable that we are not yet in a position to be dogmatic in regard to the question whether a cholangitis or a cholecystitis is present or not, as we may have fever, chills and sweat without any lesion of the mucous membrane, while on the other hand, empyema of the gall bladder may exist without chill, fever or sweat.[8]

Stone in the Common Duct.—The early diagnosis of stone in the common duct is of the utmost importance, as the operative procedures instituted for its relief are more difficult and dangerous than for stone in the cystic duct or gall bladder, and at the same time the indications for removal are more imperative. In most cases, the diagnosis ought to be reasonably easy if the following evidence is carefully considered:

History.—Remember the age, sex, and if a female whether she has borne children. A very important point is the history of a previous attack of jaundice, even though many years have elapsed. Also whether it has been preceded by attacks of colic, unaccompanied by jaundice, and perhaps diagnosed as gastralgia.

Jaundice.—As all jaundice is obstructive,[9] it must follow that this is one of the most constant signs of stone in the common duct. Immediately after an attack of colic the jaundice becomes intense, while in the intervals between the attacks it fades but does not disappear entirely so long as the stone remains in the duct. A varying degree of jaundice which does not disappear entirely between the attacks is characteristic of a movable stone in the common duct.

Colic.—The attacks of pain are similar in character to those already described. They may be slight, vague, short, or intense and long. When there is a movable stone in the common duct, and it is too large to be passed and where the duct is dilated sufficiently to allow the stone to move freely in the duct, the attacks are usually frequent, occurring every few days, are not often very severe and nearly always relieved by lying on the belly. On the other hand, with stone in the cystic duct, the intervals between the attacks may be from a few days to many years. The attacks are usually accompanied by chills, fever and profuse sweat.

Urine.—During the attack of colic the urine contains an abundance of bile, while in the intervals it is diminished but does not disappear entirely. Biliary poisoning or cholemia ultimately causes some degeneration in the hepatic cells. Poisonous products are not rendered innocuous in the liver. All these products irritate the kidneys and renal inadequacy results. There may be a slight amount of albumin in the urine, the latter being lessened in amount. The urea is diminished on account of the interference with the function of the liver, the total solids are much less than normal, and this faulty lessened elimination of waste products is probably the cause of the melancholia, while the renal inadequacy is one of the great dangers in severe, long-continued jaundice from any cause. So long as the poisons are eliminated by the kidneys the urine is poisonous and may cause convulsions in animals, but if the kidneys become inadequate then the patient may be poisoned. Jaundice urine is convulsive and not narcotic.[10] This liver inadequacy also explains why it is that in some of these cases, some time before the fatal termination, the jaundice begins to fade, this leading to the fallacious hope that the patient is improving. Instead of being a beacon of hope it is often a signal of grave danger.

Stools.—During, and frequently long after the attacks, the bowels are obstinately constipated and the stools are clay-colored. In the intervals between the attacks the feces may be coated with a darker layer and the breaks and fissures may be colored, showing that some bile is reaching the duodenum.

Circulatory System.—The pulse is slow and infrequent, often not over 40 per minute, the blood pressure is low and septic endocarditis may occur. The blood shows a fragmentation and destruction of the red corpuscles and the hemoglobin is diminished.

Digestive System.—The appetite is poor, tongue coated, bad taste in the mouth and the rate of diminution in body weight is proportioned to the degree of obstruction. In addition to the foregoing there is intense itching of the skin, tendency to hemorrhage, melancholia, etc.

PHYSICAL EXAMINATION OF THE LIVER REGION.

It may be laid down as a general rule that a continuous obstruction of the common duct, from any cause, leads ultimately to dilatation of all the biliary passages, including the gall bladder. This is seen in a marked degree in cases of compression from cancer

of the head of the pancreas, malignant disease of the duodenum involving the duodenal end of the common duct. Nevertheless, it may be asserted with equal dogmatism that in cases of movable stone in the common duct, there is ultimately atrophy of the gall bladder, and this atrophy of the gall bladder is one of the most characteristic signs of movable stone in the common duct. Not only this, but it gives indisputable evidence of the folly of connecting an atrophied gall bladder with the duodenum.

The statement is made by Frerichs,[11] that the gall bladder is dilated, and yet he tells us that he observed that later in the disease it "gradually lost its tenderness and distension and caused but little inconvenience."

The reason for the atrophy of the gall bladder is probably the following: with the patient in the upright position and with a movable stone in the common duct, it is most easily accommodated, naturally lies at the mouth of the cystic duct and thus by its action as a ball valve, prevents the bile from reaching the gall bladder. The bile has a specific gravity of 1010,[12] while gall stones, especially when composed largely of pigment and calcareous salts, etc., may have a specific gravity as high as 1966.[13] If the patient lies on the belly, the stone, sometimes from the force of gravity alone, falls back into the wider portion of the tube, the flow of bile is less obstructed and relief is obtained. On the other hand, patients tell us that they hope they will get very sick, as they will then get relief more quickly. Nausea and its accompanying relaxation allows the bile to pass the obstruction. The change in the urine, feces, skin, pulse, etc., have already been described.

Not only is the course as described, important from a diagnostic standpoint, but it is of far greater importance in indicating methods of operation. This paper is intended to discuss diagnosis only, but as a medical man I desire to enter my earnest protest against simply connecting a gall bladder, atrophied from obstruction, with the duodenum and then not removing the stone from the duct. It does not do away with the ball valve action of the stone, increases the liability to malignant disease[14] and is of little value to the patient.

Any one of the following may be mistaken for stone in the common duct: catarrhal jaundice, cancer of the pancreas, cancer of the gall bladder or ducts, cancer of the liver, malaria, disease of the heart, tuberculosis of the liver.

Malaria has already been considered.

Catarrhal Jaundice follows or accompanies gastric disturbances. There is absence of chills, temperature, colic, extensive emaciation and the jaundice is of a mild unvarying type.

Cardiac Disease which causes such extensive hepatic engorgement, thus favoring the accumulation of mucus in the tubes, may give rise to jaundice, but it is apt to be mild in degree and the evidences of cardiac disease could not possibly be overlooked by any careful diagnostician.

Cancer of the Liver.—Remember, that cancer of the liver is nearly always secondary, that the liver is usually enlarged, that there may be irregular, dense, firm, hard nodules, rapid emaciation, cancerous cachexia, ascites, malignant disease elsewhere, jaundice of gradually increasing intensity, or else absent entirely. The gall bladder will be greatly distended if the growth involve the common duct.

Cancer of the Head of the Pancreas.—This disease is often diagnosed as gall stones. In perhaps the majority of cases, a correct clinical diagnosis is impossible. To decide between an immovable stone and cancer of the head of the pancreas is rarely possible. Both may cause jaundice of an unvarying intensity, or, if any variation, then a gradually increasing degree. When the pancreas is affected and there is pressure upon the common duct the jaundice is constant. In cancer of the caput there may be pain of a lancinating character, glycosuria, intestinal indigestion, fat in the stools, cancerous cachexia, ascites if the veins be compressed. The onset of the jaundice is gradual, not sudden and not preceded nor accompanied by colic, and the gall bladder will usually be found to be dilated.

Cancer of the Gall Bladder or Ducts.—Unlike malignant diseases of the liver, cancer of the ducts and bladder is commonly primary. When we remember that Musser has shown[15] that 91 to 95 per cent. of all cases of cancer in this locality are accompanied by gall stones, and that the latter probably bear an etiologic relation to the former, it will be conceded that the clinical picture will change, depending on whether the stone or the new growth is the predominant factor in the case. It is probably seldom that a correct clinical diagnosis is made.

The necessity of an early correct diagnosis is perhaps best indicated and emphasized by the dangers of delay. Perhaps the greatest and most important of these is renal inadequacy, as already pointed out. Then we must remember the possibility of organic change in the liver itself, the increased tendency to malignant disease and the danger of cholemia in an attack of which the patient may die. Even though the patient do not succumb to an attack of cholemia, the heart may become so weakened and its muscle so degenerated, the blood pressure so low, and the tendency to hemorrhage so much augmented that it increases the danger of operation and the probability of death during or soon after it, either from renal or hepatic inadequacy. Suppurative cholangitis with or without perforation is not a remote danger, and either may lead to a fatal termination. When a stone has been diagnosed in the common duct and there is progressive emaciation and cholemia, the patient should be operated upon without delay.

70 State Street.

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In only one of the cases upon which this paper is based, was an attempt made to determine this point. The patient was my own brother and the case was one of multiple stone in the common duct. There were chills, sweats and a temperature of 102 degrees F. He was operated upon by Dr. Christian Fenger of Chicago, and at his suggestion, Dr. Stanley F. Black made cultures upon agar-agar and gelatin, both from the bile as it flowed from the wound, and also from the scrapings from the surface of the stones. These cultures were negative.

DISCUSSION.

DR. MUSSER, Philadelphia—There are many thoughts which arise in connection with a paper of this character, and there are a few, especially, dwelt upon by the report in Dr. Webster's paper which to me are of striking interest, and I think should be emphasized. From very considerable experience in connection with cholelithiasis, I am sure that we

can not rely as definitely upon age as an element in the diagnosis as the text-books would lead us to infer. We have been taught that gall stones, prior to 30 years of age, were extremely rare, at least the symptoms which lead us to believe they are present were of rare occurrence. My ideas in regard to this have been changed, and I am sure that as early as the fifteenth year gall stones may be formed and may give rise to symptoms. This was very much emphasized by a case which came under my notice during the winter; a man 24 years of age, of the bilious type, had obstruction of the common duct. The diagnosis was made without much difficulty, and after being under observation for a short time it was found necessary, because of the rapid destruction of the blood, to employ surgical measures. Some 160 gall stones were removed. The interesting point about it was that the very attacks from which he suffered at the time that we could diagnosticate biliary obstruction, he had suffered from since the time he was 13 years of age, and I am quite sure that these attacks of pain in the epigastrium were due to the presence of gallstones. There were found such an enormous number of stones that it was almost positive that a long term of years must have elapsed during their development. Many of the stones were large, exhibiting a number of layers, which must have required many years in their formation. Again, in regard to this very symptom of pain, I am sure that we have cases of biliary obstruction without the occurrence of much pain. Pain is a symptom which is present in a large majority of instances, but it may come on suddenly, and at stated intervals, and still be due to gall stones. In a recent case the pain was not only a remittent factor, but there was scarcely any distress in the region of the liver. Every two or three weeks, however, there would be an attack of distress, with vomiting, clearing off in a short time, with the other evidences of cholelithiasis. In the differential diagnosis, the question of gastralgia was touched upon. I am beginning to be suspicious of gastralgia as a disease, except in connection with neurasthenia, and organic nervous disease, as locomotor ataxia and save, too, in connection with organic disease of the stomach. I am inclined to think that a large majority of the cases that are called gastralgia are due to gall stones. I am satisfied that if the pain is severe, and if the patient is debilitated or prostrated on account of the pain, that an exploratory operation is certainly warranted, in order to determine absolutely the presence or absence of cholelithiasis. In many cases which had been treated, just as this young man I refer to had been treated, for gastralgia, the trouble has turned out to be gall stones. Barring the limitations I have given, gastralgia is extremely rare. I should like to have heard the reader laying down some of the diagnostic indications by which we could be guided to resort to operative measures. He did refer incidentally to renal indication and the danger of development of polemia. I am guided very much by the examination of the blood. The bile destroys the red blood corpuscles, and after the destruction falls below 3,000,000 it is surprising to find how rapidly this takes place; it is, indeed, not only surprising but shocking. A case which I had under observation fell to 2,500,000, and suddenly I found the blood reduced to 1,800,000, and he went into profound polemia, or the comatose state which accompanies profound anemia and death ensued, whereas if I had resorted to operation early the patient's life would probably have been saved. Watching the blood, therefore, is an indication. I do not feel that in a case of gall stone you should at once resort to operation. You ought to hold your hand firmly on the case, observing the urine, and all the other conditions, observing all the danger signals, and when these are out do not hesitate to operate.

One word further: many diseases have been confounded with gall stones, and I think Dr. Orr of London wrote a paper on these affections. I would refer to a case of pneumonia I was asked to see. The patient was being treated, however, for gall stones. The man had a very intense and severe diaphragmmatic pleurisy; he had ascites, as often occurs in pneumonia; there was vomiting, and many other symptoms of the hepatic colic, and the physician in attendance felt quite sure that he was treating a case of hepatic colic. One of the very important symptoms, and a symptom I always inquire into and believe to be present, is the occurrence of fever. This has been so extensively treated in papers recently that it is not necessary to refer to it again, that is, to that form of hepatic intermittent fever, except to say that it is a common form, very frequently attending gall stones, and may lead to confusion with other affections.

DR. TURCK, Chicago—It is to be regretted that there is not more time for the discussion of this paper. There are two points of importance in differential diagnosis between gall stones of the cystic duct, of the gall bladder and of the common bile duct. The differential diagnosis must be made, as it is of great importance. In the bile stones of the common duct, in which there is a saccule formed behind the opening, we can not consider anything else in a case like that but an operative procedure at once, because we have seen the disastrous effects from retention of poisons, the irritation of the vessels, etc. What is the temperature due to? There has been a great controversy waged between two schools, the German and the French, upon this point, the German holding that it is bacteriologic in its nature, and the French claiming that there are no germs connected with it. Recent experimentation has thrown the balance in favor of the French school, because the bacteriologic examination of the gallstones of the bile, and of the material from the walls has revealed negative results. As to the differential diagnosis between bile stones in the cystic duct and in the gall bladder, and the differential diagnosis between those in the gall duct, a little remembrance of anatomy is required as to the manner in which the cystic duct branches off, running to the gall bladder. There is atrophy in case of obstruction of the bile duct, of the gall bladder, and there is dilatation of the gall bladder in cases of gall stone of the cystic duct, because in case of gall stone of the cystic duct we have an increased secretion of fluid and dilatation occurs. In the other case there is a loss of use of the gall bladder and atrophy results. We are also aided in this differential diagnosis by the examination of the blood, of the urine, by the physical examination, and a careful analysis of the symptoms of the case.

DR. WEBSTER—The point referred to by Dr. Turck of Chicago, in regard to the etiology of these cases is very important, and yet in my paper I simply made this note, and did not really intend that it should go into discussion. I appreciated the importance of it, but did not want to take it up, as I desired to confine myself as far as possible to the diagnosis and not to the etiology. Dr. Musser regretted that I did not go more thoroughly into the question of indications for operation. The statements which I made were that the indications for a correct diagnosis were those that indicated operation. If there is gradual emaciation, with the evidence of stone in the common duct, it is an absolute indication for operation. I referred also to the examination of the blood. The careful examination of the blood, estimation of the hemoglobin and number of corpuscles from day to day is a better fact in determining the patient's condition than clinical evidence, but where you can not do this you must rely upon the clinical evidence that the patient is losing in weight. I wish to emphasize again, not only the state of the blood, but the condition of the heart. We have degeneration of the heart muscle; renal injection; liver injection, and I think these last two points especially have not been understood by the profession as they should be, and that whenever we begin to get renal and hepatic injection, these are signs of great danger and absolute indications for operation.

TREATMENT OF ASIATIC CHOLERA.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY ELMER LEE, A.M., M.D., PH.B.

CHICAGO.

Spasmodic cholera—called also malignant, epidemic, Asiatic, Indian, blue, and pestilential cholera—is generally epidemic, though not contagious. The first symptoms are generally experienced during the night, sometimes beginning with a light general uneasiness and moderate diarrhea; at other times the symptoms come on violently and follow each other rapidly. In fatal cases death usually occurs at some period between six and twenty-four hours; in a few fatal cases the patient lingers two or three days. The ordinary course of symptoms are more or less diarrhea; the discharges at first feculent, but soon presenting the appearance of rice-water or gruel; there are flying pains, or sense of coldness in the abdomen, as if purgative medicine were about to operate; the countenance is pale; there is nausea, vomiting, prostration of muscular power, and nerv-

ous agitation; cramps in the legs, arms, loins and abdominal muscles, more or less severe; small, weak pulse, intense thirst, and urgent desire for cold water; in most cases cold, clammy skin; all these symptoms may appear successively or almost simultaneously. In some cases the premonitory symptoms exist for eight or ten days; and sometimes the patient is prostrated at once. When the disease comes on suddenly the cramps usually begin in the fingers and toes, rapidly extending to the trunk; the eyes are sunken and surrounded by a dark circle; there is vomiting and purging of white matters mixed with flocculi; the features are sharp and contracted; the expression of the countenance wild and confused. The face, extremities, and often the whole surface of the body manifest a varying intensity of a leaden, bluish or purplish hue; the extremities shrunken, the nails blue, the pulse thready or wholly imperceptible at the wrist, arm, axilla, temple or neck; there is great restlessness, incessant jactitation, severe pain in the epigastrium, loud moaning or groaning, difficult and oppressed breathing; difficult inspiration, with short and convulsive expiration; voice hoarse, whispering, or nearly suppressed and plaintive; the tongue is white, cold and flabby, and the external temperature often sinks below 80 degrees; convulsions recur at short intervals, or a constant tremor exists. The secretions of bile, saliva, tears and urine are entirely suppressed, and a cadaverous odor exhales from the body. The patient retains his faculties to the last.

Some of the symptoms may be disproportionately severe, or may be entirely absent. Those usually regarded as pathognomonic are: watery dejections, blue appearance of the countenance or surface, thirst, coldness of the tongue, and pulselessness at the wrist.

The foregoing description of the symptoms of cholera is indicative of the nature of the disease calling for human aid. The time in which to treat the patient sick with cholera is exceedingly limited. What is to be done must be executed with rapidity. There is not a moment to lose between the time when the patient is first seen and the accomplishment of severely practical efforts. Many wise theories may be promulgated, but there are few practical measures that will avail against Asiatic cholera. The experiences during the cholera epidemic of 1892 in Europe, both in Russia and Germany, produced in me a profound conviction that, for the most part, remedial agencies that have been used are of questionable utility. Nearly every prominent remedy proposed and tried has been found to end in greater or less disappointment. Years ago, great reliance was placed upon the far-famed "mild chlorid of mercury." Twenty and ten years ago this remedy was given in large doses. Three years ago, during the latest epidemic, small doses prevailed. Next to this, the synthetic drug salol, the product of the laboratory of the Imperial Institute of Experimental Medicine in St. Petersburg, was the most widely used and the most favorably received. Professor Nenski, the originator of salol, personally informed me that the value of the drug could not be seriously recommended as of much importance, but that it perhaps answered the requirements as far as any drug could answer, in the hands of his colleagues. Widely circulated and various reports, enthusiastically commending and moderately commending this remedy were received by the Professor in St. Petersburg, but he himself was silent as to its efficacy. The far-famed and seemingly unmatched drug, quinin, has been used, and has been held as a dazzling gem before the eyes of the profession by some of our best men, who believe that cholera is analogous to malarial disorders, and consequently the medicine which occupies the position of keystone in the arch, for malarial treatment, is a remedy suitable to contend with the rapid and desperate symptoms of Asiatic cholera. Quinin has a stout advocate in our own country, in the person of a well-known professor in one of the Ohio medical colleges. It was not used, to my knowledge, in the treatment of cholera during the last epidemic in Europe.

A remedy was brought to Hamburg during the latter part of the epidemic of 1892 by the representative of an English syndicate, who posed as a chemist, not a physician. His remedy was a preparation of iodin, to be administered through the mouth. He called the medicine a periodate, and made some experiments upon patients in one of the cholera hospitals in Hamburg. His remedy, however, was not favorably entertained by the medical authorities in charge of the cholera patients, and whatever claims were reported came through the interest of a friendly correspondent of one of the Hamburg weekly secular papers. To show how misleading some of our supposedly authentic information often is, it is only necessary for me to refer to the report given in the "Year Book of Medical Progress," published in Philadelphia. Of all the progress made, of all the combined investigations during the entire epidemic of cholera throughout Europe in 1892, and there was an immense amount of original investigation and great effort made to discover a remedy, the curious spectacle in the Year Book, which alone refers to the remedies brought by an agent of a syndicate from London to Hamburg, at the closing of the epidemic of cholera, shows that there are some things in our profoundest medical publications that are to be taken *cum grano salis*. Uretin was extensively used hypodermically for its alleged influence upon the secretions of the kidneys, upon the ground that the kidneys were to be aided by irritating them to greater functional activity to eliminate morbid elements through the urine. The result of many investigations recorded in Russian practice show that this drug is not to be commended. Digitalis was used, supposedly to benefit a weak heart. This remedy, if at all useful, could be little more than palliative. The use of acidulated water was extensively employed in different hospitals in Europe as a drink, but not prescribed as a remedy. The water was acidulated with HCl and H_2SO_4. Subcutaneous injections of salt water were made. The proportion of salt was one-half of 1 per cent., and the amount of salt water injected subcutaneously was sometimes as much as a quart at a single injection. In one instance, during an illness of several days, as much as thirteen quarts was subcutaneously injected into the cellular tissue, principally that of the abdominal wall. This process of subcutaneous injection was known as hypodermaclysis. The purpose of the hypodermaclysis was to maintain the volume of the blood. The diminished volume of the blood is directly the result of the waste of its liquid portion or serum into the alimentary canal. In this serous discharge, flakes of intestinal

mucous gave the name of "rice-water discharges" to the bowel evacuations, the particles having a resemblance to grains of rice. The general inflammatory state of the intestinal mucous membrane, throughout its entirety, drains the blood of its liquid portion rapidly, and collapse due to stagnation of circulation quickly ensues.

The remedies mentioned are only a portion of those tried, but there is no living advocate who today can point with unerring certainty to one single organic or inorganic substance, howsoever administered, that can be safely depended upon in the treatment of Asiatic cholera. Both botany and mineralogy have been searched in vain for a cure for this disease.

The cause of this disease is perhaps accurately stated to be due to invasion of the blood and, secondarily, of all the tissues of the living organism, by toxins or ptomaines, which originate in the upper portion of the small intestine at the early stages of cholera. These products of organic activity, whether of animal or vegetable organisms it is here unnecessary to debate; but these noxious products enter the circulation through the villi of the intestine and rapidly and desperately poison the blood. It is clearly proved that the disease is the result of general blood poisoning from an intestinal origin. Whatever the chemic nature of the poison may ultimately be found to be, may be safely left to the bacteriologic laboratory. The practical and intensely important part that remains for physicians seeking to cure patients in times of this disease is to realize how much, as well as how little, it is within human power to do. The human organism is prostrated by a fierce and deadly poison. This poison is in the blood and in the cells of the tissues, and its work of destruction is quickly and effectually accomplished. Reflectively, to say nothing of experimental research, it would seem to me that the rational and only course that could be advocated with scientific assurance of relief is to, as far as possible, literally cause to be removed these products which are death-dealing to the body in which they happen to be found. Now, in this same reflective mood, think for a moment and try with me to determine whether it is possible in such conditions as produce the symptoms of Asiatic cholera, it is safer to introduce other poisonous products to neutralize the noxious elements in the blood and cells, or whether it is a better process to, without the introduction of additional foreign substances, remove what we already find in the blood. To make this proposition clearer, it could be stated in another way, namely, the body is already bearing a crushing burden; shall we add other foreign substances as an additional burden to the load already carried? The principle seems to me to be at fault. The principle is the principle of allopathy, but in the light of facts is it a safe principle to follow? It is reasonably scientific to produce in the laboratory, definite results in vessels of glass by the use of fixed reagents; in the organic laboratory of the living body, no such definite results can be demonstrated. The vital principle is an entity which enters into the formula and may be represented by the unknown quantity x in algebraic equations. Great and laudable efforts have been made to prevent as well as to cure this disease by inoculation.

Ferran, of Valencia, Spain, thrilled the world ten years ago with his proposition of a universal cure for this disease. His glory was then at its zenith. His fame has long since faded. So obnoxious became his proposition to the government of Spain that laws were adopted to suppress Ferran's cholera inoculations.

A worthy colleague and laborious investigator, Professor Haffkin, of Pasteur Laboratory fame, proposed a modified inoculation for the prevention and cure of cholera in 1892. A reporter of the New York *Herald* was inoculated at the Pasteur Institute, and with credentials sent to expose himself to Asiatic cholera at Hamburg in September, 1892. The same reporter had been similarly inoculated by Ferran in 1886 and had the courage to make further exploits in behalf of his newspaper, at Hamburg. A very widespread opinion prevails in America that the exploit of the New York *Herald* reporter during the ten days' stay as a nurse in the Hamburg hospital, constitutes a proof of the validity of Haffkin's claim, but the scientific world of Europe knows differently. *En passant*, it may be interesting to state at this place that further experiments have been made by Professor Haffkin in India with the cholera inoculations and, unfortunately for the proposition, reports have recently come to me from reliable medical sources, that a greater percentage are attacked with cholera who have been previously inoculated than of those who have not been inoculated. This subject of prevention, however, is to be discussed by me in a paper to be read before the Section on State Medicine.

The result of prolonged reflection, covering many years, and the observations resulting from personal experience in the cholera epidemic in Europe of 1892, is the conviction that there is provided in the laboratory of the universe a remedy which surpasses the results of human ingenuity as much as does the sun surpass in brilliancy the light of the artificial lamp. The all-pervading and all-wide remedy, the greatest product of omniscient nature's laboratory, which alone can cope with this pestilential disease of the human race, is nothing more and nothing less than the unmatched, unmatchable H_2O. Pure water is absolutely the only trustworthy cure for cholera, and if it came at a great price it would probably be more greatly valued. The human organism is so constituted that if it is assisted by H_2O, every morbid element may be eliminated out of its domain. The acutely poisoned body quickly recovers its equilibrium and its harmony of action as soon as the processes of elimination can remove the invading poison. In the construction of the mucous lining of all the accessible cavities and channels it is prepared by an undiscernible law to successfully resist the entrance of every form of organism. The products of organic action alone are able to pass into the blood. If sufficient quantities of pure water, of a suitable temperature, are introduced into the body through the natural channels, it is actually possible to wash morbid products as well as organic form of life, out of the human body. The mouth gives entrance to the causative germs in Asiatic cholera. That is quite conclusively established. The locality of the development and formation of the toxin in the earlier stages is determined to be in the upper end of the small intestine; and from experience, as well as from the powers of reflective analogy, there is no doubt that the system can be saved from death if the morbid entity, the germ, is literally deluged away from the

alimentary canal by the copious use of a remedy that can not be of the slightest danger to the victim. The amount of water to be used varies in different cases. It is impossible to use too much; it is possible to use too little. From the earliest moment that the patient is seen, the propositions should be, first, wash the whole alimentary canal with pure water; wash the lower portion by introducing irrigations of warm soapsuds or merely warm water into the colon sufficiently frequently and sufficient in quantity to cleanse that portion of the bowel effectually. The frequency of washing that portion of the bowel which is accessible from the rectum should be one, or two, or three, or four times a day, according to circumstances. At the same time from one to ten quarts of warm pure water mildly medicated with peroxide of hydrogen or hydrozone should be administered at regular intervals, during the day, as the prescribed remedy by the mouth. If the patient vomits, very well. Immediately re-introduce the quantity of water that was vomited. No harm can be done in any case, and if it is possible to save life it is possible to save it through this method. It is the quickest and the surest method of exciting the activity of the kidneys, and is the safest. It is the rational and effective measure for maintaining the volume of the blood. It is the scientific process by which to establish cutaneous circulation in the capillaries.

The use of simple and useful hygienic measures are the same as in other prostrating diseases. Patients should be fed with regularity at not too frequent intervals, giving the proper time, between administrations of simple food, for its digestion. The use of appliances for maintaining the heat of the body are not to be neglected.

The precise details of the method of treatment indicated at this time will be forthcoming in a subsequent paper.

100 State Street.

DISCUSSION.

DR. HOLLISTER—I found, during an experience of treating cholera in at least four marked invasions in this country, long before I knew anything of germicidal effect, that there were two substances which in my own hands were very satisfactory. The one was that of the vegetable in solution, tannin mixture, and the other the stimulating influences of cinnamon. These were reinforced by copious injections of water, and drinking also moderately strong infusions of cinnamon tea, a matter that seemed to be of decided benefit to my patients, with the injections of large quantities of water holding tannin in solution. It has only been within three or four years that I have come across the fact that either of these remedies is markedly germicidal upon the bacilli. This has been stated by several of the experimenters in connection with the treatment in Germany during the ravages of the cholera there. While water is of use in washing the alimentary canal, if we have these germicidal remedies it seems to me that the water treatment alone is not only necessary, but that we should also obtain the benefits to be derived from the others. In the irritated conditions of the alimentary canal, in infants, the remedies used seemed to me thirty years ago to have a peculiar effect in reducing the irritations.

LEUCOCYTES AND NUCLEINS.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY T. O. SUMMERS, M.D.

ST. LOUIS, MO.

I believe that St. Luke was the only physician upon the Apostolic Board, and that he is the generally accredited author of the Acts of the Apostles, in which, describing the visit of St. Paul to Athens, he declares parenthetically this very remarkable historic note:

"For all the Athenians and the strangers that were there, spend their time in nothing else but either to tell or to hear some new thing." And this neophilism which the great Apostle of the Gentiles has given as an historic character to the "City of the Violet Crown," has descended unto us of later days, and it may be said with truth that among all the workers in the great field of science, medical men are most eager for discovery and most earnest in the search for the ever-unfolding mysteries of truth. And notwithstanding the fact that this spirit of investigation has often been held up to us by those who profit by our labors, and yet are ever ready to sneer at our methods, as the "*opprobrium medicorum*," it will be a sad day in the history of medicine when we care not to "hear or to tell some new thing."

It is to a new departure in therapy, developed by recent investigation, that I direct your attention in this paper. There is nothing which has so distinctively characterized the trend of modern therapeutics and separated it from the empirical methods of the past, which has crowded our materia medica with vast masses of useless rubbish, as the contribution of physiologic products to the control of disease. It is strange that we have moved so long in the floodlight of physiologic discovery, thrown upon us by the microscope, the spectroscope, and the ingenious apparatus which makes our laboratories more wonderful to the untutored mind than were ever the alembics of alchemy to an age of romance and superstition; it is passing strange, I say, that we have so long overlooked the very principles upon which alone a scientific system of therapeutics could ever be established—the functional relations of the cellular elements of the organism.

As long ago as that stormy time in the history of the British Association, when the Thompson-Tyndall prayer-test was convulsing the religious and scientific world, a no less interesting discussion grew out of that contest upon the subject of spontaneous generation. So strong was the antagonism developed, that it affected even the terminology of physiology. Dr. Lionel S. Beale, the recognized champion of the "orthodox" party, clinging to the principle of "vital force," and giving to the blastema of the ultimate physiologic unit of the organism the name of bioplasm, while Professor Huxley gave the name of protoplasm to that which he and all of his school recognized as the physical basis of life. Nothing then was known of the exact structural and functional character and relations of this peculiar cell substance, which appeared to act so differently under conditions apparently the same. It remained for later physiologists to show just what part this ultimate vitalized material played in the great drama of physiology. It was found that both these great scientists were correct, but viewing this cell-blastema under different conditions, their definitions differed accordingly, yet led up to the same result as in the case of Copernicus and Ptolemy, or to speak poetically:

> "Like that target discussed by the travelers of old
> Which to one appeared argent, to one appeared gold;
> To him ever lingering on doubt's dizzy margent
> Appeared in one moment both golden and argent."

The first step in what may be called the new

physiologic system was taken, when with the improved mechanism of the microscope, it was demonstrated that of the two kinds of corpuscles which float in the plasma of the blood, the larger or white corpuscle, the leucocyte, was in every respect a perfect cell, possessed of a cell wall, which Dr. Beale distinguished as "formed material," a blastema or plasmic granular substance, in which floats a body called the nucleus. How many of these may be thus involuted can no more be estimated than can the problems of time and space be solved by the finite mind.

The next step toward establishing our new physiologic system, was taken when the leucocyte was found to be the real unit of the organism, the agent through which all nutrition is accomplished. Up to a very recent date, it was believed that all the nutritious material which had been operated upon by the digestive agents, passed directly into the general current of the circulation, floating freely in the plasma of the blood till it reached the capillaries, and then by a reversed osmotic process was taken up by the individual tissue cells, only that part being taken up by them which was necessary to the support of that structure represented by the cell, and the rest passing on in like manner to the other structures until all parts of the organism were nourished.

The red corpuscle was recognized as the oxygen carrier of the system, and the eliminator of carbonic acid, but neither the origin nor the function of the white corpuscle was in the least understood by even the most skillful observers. Later investigations, however, proved the identity of the leucocyte with the lymph corpuscle, which was itself supposed to possess as the simplest original cell, metabolic functions. This gave a new importance to the leucocyte, and when to this was added the recognition of the pus corpuscle in retrograde metamorphosis, as nothing more nor less than leucocyte under altered conditions, it was not long before its true significance as the real tissue-builder of the organism was fully established. A peculiar movement of the leucocyte as it goes along through the current of the blood, had long been noticed, called on account of its resemblance to that of the amœba, the lowest form of animal life, the amœboid movement, by which it changed its form apparently at will, becoming often so elongated and slender that it slipped through the walls of the blood vessels and held high carnival in the surrounding tissues. All this pointed to some mysterious power or function as yet unrevealed to the eye of the physiologist. A closer study of its morphologic characteristics proved that there were several forms of leucocytes, differing in the number of nuclei which they possessed. The simplest, those having but one nucleus, were called mononuclear, those possessing two or more nuclei, were called multi- or polynuclear leucocytes. In these it was seen that the amœboid movement was most active. Vierordt, who has made the most accurate observations upon the blood, of any other physiologist, perhaps, found the numerical relation of the leucocytes to the red corpuscles to be in health in the ratio of 1 to 671.

Now, we are prepared to understand the next step in the functional history of the leucocyte. These bodies differing in size, shape, and number of nuclei, were observed to swell up and burst, pouring out a plasmic granular mass, which appeared to be in a state of active molecular vibration. The nuclei came forth from the breach in the cell wall with some of this blastema hanging closely around it, while the rest of the blastema, with the ruptured cell wall, floated off in the blood current. Where there were two or more nuclei, each one became rapidly a perfect cell with its nucleus and nucleolus, and in this way was established a great increase in the number of leucocytes. This process of cell proliferation, it will be seen, lies at the foundation of all nutrition. The next phenomenon observed was what might rationally have been expected to be established—the taking up by the leucocytes of the proteids which are delivered to the blood by the absorbents after digestion is complete.

As soon as these proteids get within the walls of the blood vessels, they are immediately attacked by the leucocytes and taken into their cell walls by that osmotic process which is the basis of all physical action in the organism. Mingling with the blastema of the leucocyte, these proteids become suffused as it were, with a certain molecular activity imparted to it through the influence of the nucleus, something like that observed when an electric current renders nascent certain chemic agents that without it are negative or inactive. It is this vitalized pabulum to which physiologists have given the name of nuclein.

The next step in physiologic evolution is the appropriation of this pabulum by the individual tissue cells of the body as it passes through the capillaries. And here it must be noted that no assimilation of any nutritive substance (except of inorganic origin, as water, etc.), can take place through any medium but that of nuclein, and it is in the multinuclear form of leucocytes that we find it developed. It has long been known to physiologists, but its wonderful place in the economy of the organism was never known until the close study of the leucocyte developed its origin and function, and in this way cleared up some of the most hidden mysteries of the organism, and placed in the hands of the therapist, the most wonderful agent of therapeutic power yet known to scientific medicine.

To return to our panorama of nutrition. Seeing then the proteids must all report to the leucocyte and be stamped with this nuclear influence before delivery to the several tissues, the bursting of the leucocyte is readily understood, for by this means the nuclei are set free to become new cells, and a great quantity of this cellulized tissue pabulum is poured out into the circulation, bathing with food every hungry cell of the several tissues through which it floats, each cell taking up that which is necessary to its molecular activity and returning to the current that which belongs to other and remote tissues of the organism. This conversion into tissue through the circulatory system, of material lifeless in itself, is the most wonderful phenomenon presented to the human mind. We can not explain the affinities by which certain kinds of pabulum are accepted and others rejected by the several tissue cells of the body, any more than we can explain the affinities between the sexes, often so seemingly astounding. We know this, however, that the change which goes on is the elaboration of a vitalized or cellulized substance, which is capable of entering at once into tissue as soon as it meets the various cells which have this power of elective assimilation. This primal cellulized pabulum has,

therefore, been appropriately called nuclein, from the mode of its generation, and when operated on by the individual tissue cell it becomes proto-nuclein, after the analogy of Professor Huxley's nomenclature, which represented its real origin. This substance is rich in phosphorus, and has been separated in active form from the lymphoid structures of the body, as we shall see later.

We are brought now, face to face, with one of the most formidable problems of physiology, the solution of which will destroy many of our old pathologic ideas, upon which so many therapeutic systems have been wrecked. Up to a very recent date in the history of pathology, leucocythemia was considered a specific disease. Upon the *post hoc propter hoc* principle of medical philosophy, the rush of leucocytes to any point of irritation was regarded as a feature, or even a distinct stage of the disease. How vividly can the memory of some of you recall the old professional saws, as they were called by those of us who sat at the feet of the Gamaliels of those days, among which there was none more familiar than the *ubi irritatio ibi fluxus*. We answered almost all our questions upon inflammation with this single axiom, as we believed it. Often have I heard the venerable Gross straighten his lofty form and declare in a stentorian voice, that inflammation consisted, pathologically, of the rapid afflux of leucocytes! How startled would he be to learn that modern physiology has demonstrated that that rapid afflux was Nature's reinforcing battalions! Every white blood corpuscle that gathered about that point of irritation bore with it the materials of repair, and as still later investigation has proved, also the power of overwhelming toxic germs, themselves in their incipiency, and protecting the organism against their poisonous and deadly exudations.

As to the phagocytic action or cell-eating power of the leucocytes, which has been strongly claimed by some observers and as strenuously denied by others, it is, after all, a mere question of difference in the manner of destroying toxic germs, which has developed antagonism among physiologic observers. It is, as I have upon a previous occasion already remarked, not at all necessary that because the physiologic or pathologic function of one cell is lost in that of another, we should, in speaking of such action as a phagocytic or cell-eating process, imagine a mouth and teeth and all the paraphernalia of mastication, deglutition, etc. The result is the same, whether the pathologic germ is swallowed, destroyed or neutralized; so long as the cellular influence of the leucocyte is the agent which accomplishes this, it is immaterial whether we use the term "phagocytic" literally or metaphorically, but notwithstanding all the adverse criticisms of the word as used in this connection, there is none given us which more emphatically expresses the idea we wish to convey; the difficulty of nomenclature is too great to lightly reject so expressive a word which as bacteriologists and morphologists all admit, does certainly most vividly express the primordial condition of which this is the physiologic analogue. In its last analysis, after all, it is the molecular disturbance produced in the germ that deprives it of its toxic power. This we know will effect even chemic action. Upon this, all fermentative processes depend.

Isomerism is another example of the effect of molecular arrangement or disarrangement. Where can you find two substances more distinctly different than sugar and gum arabic, and yet they are exactly the same in composition and in the proportion of elementary combination, the difference in arrangement of the molecules being sufficient to account for the difference in chemic and physical properties. With these examples before us, and I could, if time permitted, bring out many others equally as striking, it is very easy to see how the slightest disturbance of molecular arrangement in any germ will deprive it of its specific character, and by investing it with certain cellular elements, emasculate the most deadly of toxic bacilli and send them harmless through the blood currents of the organism. Having, therefore, found that it is within the leucocyte that all protozoic material is developed, that upon the proliferation of the leucocyte all assimilation depends, it is but a step further to establish the action of the leucocyte in resisting the effect of toxic germs, as well as divesting them directly of toxic power. It would perhaps be more accurate to define this action as a supporting of the elementary structures of the body to such an extent that they are capable, of themselves, to overcome the pathologic influences which are being continually introduced into the organism. To those whose daily experience brings them face to face with the awful side of human life, I think I can appeal with emphasis, when I state that there is scarcely a breath we breathe, or a drop we drink, or a morsel we eat, that is not charged with the germs of deadly disease, and if there were not in our organism a distinct provision made for the resistance of such germs, to use a Pauline expression, we should "die daily." When the tocsin of disease is sounded through the organism, it is the rushing of the leucocytes that constitutes the first physiologic response to directly resist a toxic agent, or supply the structure attacked, with material for nutrition or repair in case of lesion. And yet there are still those among the ranks of intelligent practitioners who consider the increase of leucocytes as an element or phase of disease itself, instead of nature's effort to support her crumbling battlements. At this stage of my argument, I shall, upon the strength of what may be microscopically demonstrated to be the function of the nuclein-charged leucocyte, make an assertion which, I have no doubt, will be considered perhaps too arbitrary. It is, that whatever of so-called specific effect lies in the antitoxin obtained from the immunized animal, as opposed to the bacillus and the toxin of diphtheria, is accomplished by the excitement of leucocytosis and, after all, the end is reached by the same physiologic process.

The ultimate aim of all antitoxic agents must be overwhelming of the toxic element of the germ, and this can only be accomplished by a great excess of physiologic tissue building material. Let us observe the process by which this antitoxic effect is brought about. In the first place, the physiologic relation of proto-nuclein would, naturally, preclude the idea of its action as a direct specific antidote to a specific poison such as that observed between chemic agents, or even physiologic antagonists, as for instance, the hydrated sesquioxide of iron against arsenic, or atropia against morphia, or chloroform against strychnia. Were this the principle of the functional activity of proto-nuclein, its therapeutic range would be limited to such an antagonism, but I am prepared to show, by careful experimental records, its effect is first ob-

served when the system has been thoroughly charged with it, thus preventing the expression of the toxic agent by a preoccupation of the nutritive field, and an investment of the attacking germ. I have often noticed a leucocyte thoroughly charged with original nuclein adhere to the cell of a sarcoma, and after bursting itself, send the round cell floating away in the field crenated and almost emptied of its contents. Such effects have been observed also upon the blood after days of treatment with proto-nuclein. This appears to me to be the very *ultima thule* of therapy; and the question will be, has been, very naturally asked after such developments: "If such be the power of a substance capable of investing, controlling and overwhelming toxic agents, where is the limit to its action?" If I spoke the truth boldly, as it should be spoken, I should answer that, properly applied, I can see no limit to its resisting power. When, side by side with my own experiments, I have observed what I admit to be the wonderful effects of antitoxin in the organism of the bacillus and toxin of diphtheria, I have nevertheless felt that proto-nuclein was as far superior to it in pathologic results, as the whole realm of pathology is greater than a single disease.

And now we come to the question of practical interest to the general profession, How is it possible to extract this delicate substance from the animal tissues? and its corollary, What are the methods used to preserve its cellular activity?

There are three forms of nuclein material now before the profession: 1, nuclein made from yeast; 2, another preparation of nuclein has been prepared which is taken from the animal organism by chemic methods, prepared in tablet form for internal use. I am not aware that this form has ever been prepared in solution for hypodermic use; 3, the third form of proto-nuclein is a product taken directly from the lymphoid tissues of the healthy animal, the thyroid and thymus glands, the brain substance within the area in and about the corpora quadrigemina, the pituitary body and pineal gland, the pancreas, spleen and liver. No chemicals are used in this process, the methods of extraction being purely physical, and the proto-nuclein is kept active by an investment of gum benzoin and milk sugar which preserves it indefinitely, just as the germ of a grain of corn is kept potentially active by its environment. The activity of the proto-nuclein may be easily shown by dissolving some of the powder in distilled water. After the sediment has settled, draw off the supernatant fluid and apply a drop of it to a drop of freshly drawn blood. You will see a most beautiful physiologic panorama, instantaneous photographs of which I have here for your inspection. Proto-nuclein is richer in nitrogen than the ordinary nuclein of the text-books. Its formula, as far as it is possible to be chemically accurate in quantitative analysis, is $C_{29}\ H_{40}\ N_{10}\ P_5\ O_{32}$ differing by about one equivalent of nitrogen. It will be noted how rich in phosphorus this wonderful physiologic agent is.

So much, therefore, for its preparation and extraction. The most important factor in the problem is the answer to the questions, What will it do? What can it cure? What will it prevent? in the great battle between science and death. Were I to give free range to my own confidence in the therapeutic power and range of proto-nuclein as observed from day to day for the last six months, under the most favorable circumstances and under the direction of experienced and authoritative clinicians, you would discredit even the demonstrations of this report. But if you will consider for a moment what a sweeping therapeutic power must belong to any agent which is the normal tissue builder of the organism and the direct antagonist of its invading toxic germs, you will see how difficult it is to limit its indication as a therapeutic agent. Its most pronounced results have been observed in tuberculosis, sarcoma, neurasthenia, tonsillitis and la grippe. In such cases it has shown a most wonderful power. In the hospitals of New York it has been used with general success in the following diseases, beside those already mentioned: diphtheria, neurasthenia, pernicious anemia, general marasmus and other cachectic disorders, fevers, etc. As to its dose and mode of administration, I subjoin to this paper full directions which have been carefully prepared from the closest clinical observations.

Nothing has been left undone to thoroughly test the practical truth of what has been theoretically claimed as a therapeutic power. I believe with others even more conservative and less sanguine than I, that it will mark an era in therapeutics. Such relationship between the pabulum and the individual tissue cell of the various structures of the body, seems to be the very last analysis of function in the human organism. We approach, as it were, the very *Shekinah* of physiology. Up to the time when therapy began to look to physiology for help, our whole system was a vast accumulation of clinical reports without one iota of determining philosophy—a vast labyrinth without an Ariadne thread to guide the returning footsteps of our reason. I doubt not that before the close of the nineteenth century, our therapists will look back upon the thousands of agents vaunted in the cure of disease, as the modern soldier gazes upon the spear and shield of ancient Greece and Rome. The simplification of physiologic methods has been followed most naturally by the use of those physiologic principles of therapy upon which the normal curative conditions of the organism depend, and without which no scientific system of therapeutics could ever be formulated.

THE PHYSICIAN OF THE PAST, THE PRESENT AND THE FUTURE—A DEFINITION OF HIS SOCIAL POSITION.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY JULIUS KOHL, M.D.

MEMBER OF THE STATE BOARD OF HEALTH OF ILLINOIS; MEDICAL DIRECTOR OF ST. ELIZABETH'S HOSPITAL, BELLEVILLE, ILL.; MEMBER OF THE ST. CLAIR COUNTY MEDICAL SOCIETY; MEMBER OF THE ST. LOUIS CITY HOSPITAL MEDICAL SOCIETY, ETC.

BELLEVILLE, ILL.

In this age of progress, when we behold a constant race for new discoveries in medicine and surgery, when nearly every day brings new surprises, it may not be amiss to pause and take a glance at our profession from a different point of view. May be we will discover that it needs a little attention in another direction. I admire every diligent worker, every untiring student. But with all this, the nobility of our profession must stand foremost. Our calling is not a business alone; neither honor nor the desire for dollars and cents alone are at stake. It is an exalted vocation. The unsullied social position of the

physician should tower high above his other achievements.

THE PHYSICIAN OF THE PAST.

It is only for the purpose of introduction that I will dwell as concisely as possible on the history of medicine, and the physician of the past. Some historians, among others Daniel LeClerc, have traced it into the remotest ages, as far back as twenty-eight hundred years before the Trojan war. The most of it is mythical, and it would be a waste of time, from a medical point of view, to analyze the fables of the ancients. Whatever was known to the ancients of medicine, rested in the hands of their pseudo gods and priests.

No doubt that at all times there was disease and suffering and that attempts at healing were made. The Bible throws no light on the subject of regular practitioners of medicine and surgery among the Jews. If we look around among their cotemporaries, we find the Aryans prominent. They inhabited for many centuries as a compact nation the great plains, the highlands of middle Asia. Like the history of nearly all ancient people, theirs is transmitted to us through their religious and their war hymns. They possessed no other literature. Their songs and prayers reveal to us their doings, their pleasures, their wishes, their joys, their ills, their knowledge and their ignorance. In the collection of their hymns, the "Rig-Veda," they implore the gods for help in sickness—not one special god—they name several, but most frequently the twin god, Aswin. Eventually, in one of their songs, the word physician appears. They sing: "Our wishes are many; the charcoal burner wants wood; the priests, gifts; the physician, patients." This shows for the first time in the history of medicine a distinct recognition of the physician and the separation of that science from the office of priest. Magic is also mentioned as a healing power in the "Atharva-Veda."

There is no doubt about the existence of the Egyptian priest-physicians. While the divine mission of Moses will not be questioned, nevertheless his knowledge of medicine and hygiene was obtained in the land of the Pharaohs.

The Phœnicians must certainly have had their physicians, and without the existence of some medical literature before Hippocrates, it would have been impossible for him to have left us so much information that, even in these advanced times, is of incalculable value and benefit to the profession.

Prior to Hippocrates, schools of medicine existed at Kos, Knidos, Rhodes, Kroton and Kyrene, and however primitive and imperfect they may have been, we must consider them as pioneers. With Hippocrates began a new era. What had been up to his time a mass of blind mystic empiricism, mostly in the hands of the priesthood, was by him for the first time in history, converted into a system, and when we consider the limited resources at his command it is wonderful how perfect he has made it. For centuries it was the only guide, and Galen who lived in the year 131, Celsus and others, down to Avicenna in 980, notwithstanding their renown, and the great works they too have left, were unable to add much to it. At last Paracelsus, in about the year 1500 introduced chemistry into medicine and thereby changed the whole system. About the year 1520 he destroyed by fire publicly, in the city of Basel, all the works of Galen and Avicenna, indicating the final closing of the ancient methods of medical practice.

How much valuable medical history was destroyed at Alexandria by the fanatical Moslems will remain unknown to us forever. Even after Paracelsus, medicine was not looked upon as an independent scientific system. The church which monopolized all branches of science, was very slow in granting it freedom, and the students of theology in Sweden, and other continental countries, were compelled to take a course of medicine as late as the beginning of the present century.

During the Middle Ages the study of medicine, together with the other natural sciences, rested of necessity in the hands of the priesthood, and many were better versed in these branches than in theology. Students at the centers of learning in those days devoted nearly their whole lifetime to become masters of all sciences, so much so that in course of time regulations had to be adopted, and we find about the year 1200 the pious and learned monk Helinand, giving utterance to his feelings in the following plaintive words: "*Ecce querunt clerici Parisiis artes liberales, Aureliani auctores (sc. classicos) Bononiæ codices, Salerni pyxides, Toleti Dæmones et nusquam mores.*"

Later on, the practice of medicine, especially surgery, was by a decree of Pope Gregory forever prohibited in the following language, and confirmed later by Pope Innocent III. in the General Council of 1216: "*Sententiam sanguinis nullus clericus aut dictet proferat, nullus quoque clericus ruptariis vel ballistariis aut hujusmodi viris sanguinum præponatur, nec ullam chirurgiæ artem Subdiaconus, Diaconus vel Sacerdos exerceat, quæ adustoniem vel incisionem inducit.*"

Regular physicians and surgeons had to fight their way against many obstacles, to bring about the emancipation of the profession. At best, the practice of medicine during the three hundred years preceding the present century was a mixture of science, theology, astrology, magic, witchcraft, superstition, spiritualism and a mass of other indescribable 'isms. It was empirical to a great extent. The last fifty years must be credited with having given to the world the exact sciences of medicine and surgery, and their emancipation has been completed.

We, their disciples, should rejoice to have lived to see this. With gratitude we should look back to the giants in our art who have preceded us. Imagine the clouds of darkness with which they were surrounded, often frustrating their best endeavors. Let us admire their diligence in delivering to us their literature without the assistance of the printing press. Let us give credit to those that preserved it for us during the Middle Ages, often miscalled the Dark Ages. Let us turn with reverence and admiration to the industrious monk in his lonely cell, through whose midnight labor we have had preserved to us the manuscripts of the ancients.

What would have been left to us if he had not saved those treasures from the destroying hordes of Alaric and Attilla, the Gaul and the Saracen, in whose invasion of the then civilized Europe, the lifework of the sage perished with the handiwork of the peasant.

We are prone to censure these pioneers of science, but it is questionable, whether our most learned cotemporaries could have done more for medicine and surgery than those persecuted scholars of ancient days.

Looking over the history of Rome, we find that our days produce the same impostors as lived during the Roman Empire. Notwithstanding the teachings of Hippocrates and Galen, the special healing gods were appealed to by the best and most refined of those days. There was a continual pilgrimage to the temple of Petosiris, for astrological advice in sickness, regarding which Juvenal ironically exclaims as follows: "*Capiendo nulla videtur aptior hora cibo, nisi quam dederit Petosiris.*"

What difference is there between this and the modern Christian science healer, and kindred humbugs?

THE PHYSICIAN OF THE PRESENT.

But let us consider the obstacles surrounding the physician in our days. Quackery will never die. The Indian medicine man of the forests of undiscovered America, with his invocations and posturings, has but changed his name and garb and is with us now in the nineteenth century, stealing his way as a Christian science healer or sophist of some kind, into all classes of society; into the hovel of the ignorant poor and the palace of the rich and apparently educated. The quack and his victim will live forever. Ignorance and dishonesty will always seek the false, the mysterious and the superstitious. It seems impossible to educate the masses into an understanding and appreciation of the unerring laws of nature. The physician of to-day and of the future will have the same never-ending contention with charlatanism and ignorance.

I come now to consider the position of the physician of the present. Medicine and surgery are recognized by the entire civilized world as independent sciences, and we, their disciples being intrusted with their care and application have assumed, as the physicians of the present day in this immense field, the greatest of obligations and responsibilities. We have at our command the whole earth and its surroundings, and have the right to press all into our services, but with these rights are manifold duties which I shall attempt to enumerate in part.

The duties of the physician to himself, his patients, and his fellow-practitioners, are well laid down in the rules and regulations adopted by this ASSOCIATION many years ago, and they come as near perfection as any set of laws known to me. For the purpose of brevity I will not dwell on them, but will at once come to the consideration of the duties of the physician in regard to some of the great social questions of the day.

It may be asked, What has the physician to do with the great social questions? I answer, His relations to such questions place him on a footing equal to, if not above, that of the spiritual advisor. No one comes in daily contact oftener with his fellow-men than he. He is their firm friend and recognized superior in matters pertaining to a knowledge of nature and her laws, which he is in duty bound to promulgate every day. When the great Creator of the universe made laws, in silent obedience to which the stars and heavenly bodies move, laws which all nature obeys, he formulated a code of law, which even man, the prince of creation must obey.

But I hear the question, Is not this the province of the church and State? I answer, yes. They have their part to perform, but whether or not they do their duty is a question about which there is grave doubt. Looking at the State and the enforcement of its laws by the courts, it is apparent to every thinking man that it falls far short of performing its great duty. As to the church it seems to have lost its hold on mankind to a large extent. Self-styled evangelists travel through the land, seeking by preference the large cities. Their discourses are sensational, for their hearers love sensation. After a season of pretended exhortation, and addresses made to men only, they shake the dust of the city from their feet and depart, their pockets well filled, leaving behind them only a cloud of smoke. The churches are turned into club-houses; sweet songs, sweet music, (of a nature mostly unsuited to the worship of the Creator), mouth preaching is all that remains, and only the dance is lacking to make the entertainment complete. The masses of to-day want entertainment. It does not matter what is given them. They are ready to applaud Ingersoll to-day, the traveling religious mountebank tomorrow, and Barnum's show the next day. It is only a modified repetition of the cry of *civis* and *plebs Romanorum*, during the declining period of that mighty empire, "*Panem et Circenes.*"

The honest pastor who educates the youth of the land in morality, in order to make good men and women of them, is at a discount. Church dignitaries, high and low, quarrel among themselves to the detriment of their flocks. If any one doubts the poor outlook for help to mankind from the church, let him cast a retrospective glance at the monumental farce of the present century, the Religious Parliament, held at Chicago during the World's Fair. Unless the spirit of a Peter Cartwright, Marquette, Father de Smet, Prince Galitzin or others, of like character reappear, not much can be expected. Not even the last resource of the masses, the salvation army, will avail.

Let the doctor, the emancipated physician of the nineteenth century, with a grateful heart do *his* duty.

I say the physician must take a firm stand on all social questions. When he is girded with the armor of the never-erring laws of nature, he is ready to fearlessly take up the gauntlet against any antagonist. Let me begin with the laws of the propagation of the race. It is not the purpose of this paper to give a dissertation on them; they are prescribed by God, the church and the State. That which comes within the province of the physician is of a twofold character. On the one hand, he is called on to remove physical obstructions which stand in their way, but oftener, in our days, he is called upon to interfere with the laws of nature. The first one belongs to one of the proudest duties of his profession; the other is the offspring of Satan and alike detestable and abhorrent.

The duty of the physician upon being consulted by the moral leper who would prostitute the noble science of medicine and surgery to the foul purposes of such wretches is plain. He should stamp upon such intention and prevent by all means in his power the consummation of the greatest crime against nature. Procreation impregnates all nature and all natural laws, and a society which tolerates the violation of these natural laws deserves the fate of a Sodom and Gomorrah.

About three years ago, a number of so-called learned people held a convention in the city of Detroit, Mich., in which the subject of interference and prevention was discussed by some male and female

physicians there assembled, and the disgraceful spectacle was presented of a large advocacy of these unnatural and abhorrent methods. There was only wanting the presence of the majesty of hell to furnish the diabolical perfume befitting such a discussion. Let no reputable physician soil his hands and disgrace his profession for filthy lucre. These foul practices once taking a firm hold on society destroy mankind, womanhood, the family and the State. The history of the world is filled with the proofs of their dire results. A once powerful prominent nation of Europe, where the system began about one hundred years ago, goes begging to-day for a ruler and the end of it has not yet come. I deem it to be the highest duty of the true physician to destroy all literature aiding the practice, whether called by their true names or under the delusive title of tokology, etc. Such literature is properly called "Satan in society."

But enough; let us proceed to a further branch of our inquiry. What is the duty of the true physician regarding the question of the emancipation of woman?

Man has his place in the world, so has woman, and nature has drawn the line. Man should be the protector of woman. In all the ancient nations, which can be held up as an example, the Jewish nation seems to have taken the proper stand. There the woman was conceded the place belonging to her. Christianity has done the same thing somewhat improved, but step outside the boundaries of Christendom and the woman is found to be a slave. Physicians should unite against the modern false emancipation of woman, for they know it is a perversion of nature. Protect the woman, give her a chance to sustain herself honorably when those to whom she has a right to look for sustenance neglect to do it, but do not delude her and assist her in the belief that she is man's physical equal. Put her on the same footing with man, with full-fledged rights and privileges, let her contest on a physical plane with man, to sustain herself, what will become of her? The physician must know the ills and evils that will beset her. There have been and there still are, very many great women who will forever shine in history, empresses, queens and others in all stations of life, among them the sisters of charity, the physician's best friend and helper. There were the brave women of Saragossa, and our own great American women of the wars of independence and of our late war for the Union. I doubt if all these great and good women would join in the cry for woman's emancipation, in the modern sense. The physician should be the daily teacher to refute the falsehood for the sake of woman. The physician can never approve of the perversion of the laws of nature, and it is believed that such laws stand forever as a barrier to the attainment by woman of that equality so much desired by the agitation of the present generation.

And now the liquor question. Wines and liquors are the gifts and products of nature, then why make war on them, instead of upon their abuse? The physician needs them. He knows the genuine from the adulterated, by virtue of his knowledge of chemistry and pharmacy. Prohibit a legal traffic in wines and liquors, and the physician, his patient and the public in general are at the mercy of the smuggler. The physician should advocate laws for inspection of food and drink. He should see to it that these absolute necessities of mankind are pure. He should never lend his aid to the enactment of prohibitory laws because they are unnatural. Nature gave to man the earth and its contents for his use, but not for its abuse. God created man to be like him, not to be muzzled like a wild beast, to prevent him from harming himself with his Creator's gifts. A godlike man in chains, guarded against himself, protected by law and force from his own acts, presupposes that he is affected with a species of insanity, which requires confinement and curtailment of liberty. Physicians, the students of nature, can not sanction laws so unnatural. If the teachers of mankind have neglected their business, do not help them to patch up their work with nostrums, but as true helpers of mankind point the way to obedience to those natural laws by which mankind must ever be governed. The physician should be found on the side of sound reason, performing his duties regardless of the cries of fanatics or the claims of quacks.

These are some of the more important duties of the physician, considered with reference to his social position. Time forbids a discussion of the numerous minor duties.

I do not wish to be understood as advocating that the physician should seek controversies on the subject of his duties. His duties are of such a nature that they do not admit of public discussion, except with and by physicians. The nature of his duties, reaching as they do into the privacy of the home, preclude particular open discussion, and permit but of a generalization when presented for public inspection.

The object of touching on these social questions is to define the position of a physician toward them, as he is above all others the intimate friend as well as helper of the family, the foundation of all human government. Intimately connected as he is with the inner life of his patients, he should above all things strive to be in the right, the just and natural side of all matters which come within his sphere.

The physician of the nineteenth century must not allow future generations to think of him as narrow and contracted, but history should record him as a man of broad and upright views, a scholar, a sage, whose best thoughts and aspirations were for the advancement of the noble science he had espoused. His care for his patients, his thoughtfulness and watchfulness for them requires his most earnest examination of all their surroundings and the principles of hygiene and sanitation should receive his closest attention; he must make war on the sins committed against them daily; privately, when he comes in contact with them in the case of his patients; and publicly when his duty as a citizen, having in view the welfare of his fellow-man requires it.

Mankind needs much instruction and, considering our boasted learning, it is astonishing how little the principles of hygiene are understood by the masses; how little attention is paid to pure air, pure water, pure food, clean houses and proper ventilation, as medical assistants. What a field for the physician, and in a direct line with his work socially! It is wonderful what can be accomplished in this direction by well-directed action on the part of the physician; adapting himself by reason of his close relations with his patients, to their needs and wants, he becomes at once the purifier of their minds, their bodies and their houses, a position socially to be envied by all men.

THE PHYSICIAN OF THE FUTURE.

The first duty of the physician is to sustain himself in the position heretofore described, and to accomplish this he must be equipped with a thorough education. The standard of education must be raised. It is true that nearly every medical college is proclaiming that necessity, but such proclamations are but as traps for the unwary, and it is expected that by the mere noisy declarations of the necessity they will be credited with having accomplished the fact.

Before we can speak of a medical education we must look to the education of the student, and that question solved I have no fears for the professional education. When this country was new and there was a demand for physicians, it was quite natural that this demand should be supplied. I will utter no word of censure against the medical school of the past. The profession of medicine and surgery in our country in the past can boast of a great number of pioneer giants. I would name some of them out of respect, but since they are known to the members of the ASSOCIATION I will, for the sake of brevity, deny myself that pleasure. We are now, however, on the threshold of another and different period, and this ASSOCIATION must place itself on record as indicating the path which is to be followed in the future. This ball, the earth on which we dwell, is growing smaller, figuratively speaking, day by day. We are surrounded by a world of intelligent neighbors. The oceans that separate us from other continents have lost their terrors. We must become the equals of other nations in literature and science, as well as in trade and commerce. Can the American physician and surgeon afford to be behind his brother of the old world? Never!

The time when the green country lad, however intelligent and ambitious, or the man advanced in years, can take up books at any time and begin to read law and medicine is past; the education of the professional man of the future must begin early in life. At the age of 10 years the boy intended for a professional career must be able to read and write correctly and he must know the rudiments of arithmetic (I am describing now the education of the student in Europe). He has by this time had a glimpse into history and geography. At the age of 10 he is removed from the common schools and enters into a higher grade. There the study of Latin and one other modern language begins, together with higher mathematics, history, geography, botany (botanical gardens are attached to these schools in many places), zoology, etc. By the time this boy is 14 he is a pretty well educated fellow. Other studies then follow in still higher graded schools, and other languages are added to his studies until at the age of 17 or 18, our European student, if he has any of the ambition of youth is a highly educated person. Give us a young man brought up in this way. Give us one who has in addition to that, or in lieu of some of the unnecessary branches, pursued those taught in the manual training schools (called polytechnic schools in Europe), and you have the only student fit to take up a profession.

Our future American student of medicine or law will have to be brought up in just this way. Hundreds of them pursue this course now. One prepared in such a thorough way can accomplish more in two years of professional study than the one not so prepared in four or six, nay even in a lifetime. Give us the well-prepared student, and the bogus medical schools will die without legislation, for the want of students. I think, in fact, I know, that many of our schools of medicine are good. They exhibit an honesty of purpose which is commendable. Let the AMERICAN MEDICAL ASSOCIATION assist in furnishing them the proper students. Legislation is now pending in several States which will, when perfected, take the entrance examination to medical colleges out of the hands of the college faculties. This is a step in the right direction. In one of our States this move will be inaugurated in the near future. It must only be borne in mind that in this, as in all progressive measures, radicalism is to be avoided. The truth once conceived can force its way to a triumphant acknowledgment only by sensible measures. Step by step this must be accomplished. Step by step, just like the education itself. The wisdom of those who are by law empowered to regulate such matters will have to be exercised to its highest degree, and justice and impartiality must form the basis of all their actions.

With chemistry and the microscope the study of the germs—histology, physiology, pathology, etc., have been revolutionized. How is it possible for the future physician to combat the problems of nature and disease; how can he expect to master the study of his profession with a few courses of lectures? It is an absurdity to suppose it. It requires a lifetime and a foundation well laid. Twenty-five years hence when we observe a physician's sign, we must expect to find a true physician; the pill-peddler with his saddle-bags will only be known in history.

The future doctor will have his private laboratory. He can not even prescribe for a simple case of rheumatism without a preceding chemic analysis of the excretions of the body. The future doctor will not permit every ambitious manufacturing concern, as is customary at the present day, to do his thinking and lull him into the false habit of lazily prescribing their stuff. The future doctor will not prescribe before his diagnosis is complete. He will examine the sputa, the ulcerated throat, in short, everything else, to make sure what he is dealing with. Chemistry, the microscope, electricity, and all the powers and resources of nature will be pressed into his service. What is done by only the few to-day will then be the universal practice.

Medicine will then, indeed, be a science, a profession. The man with an 'ism or 'pathy will also vanish. He is only the product of ignorance and perverted education. Science has no 'isms. Facts alone count in science. Truth has no barriers; it penetrates everything, and the spirit of truth rules the universe. It may be hidden, it may be trampled upon, but it will come out victorious in our science as in everything else. The physician of the future must follow the truth. The laws of nature are his guide and they will never mislead him. Honest study, honest investigation will lead to his individual success and to the honor of his profession. The well-educated and, I hope, the well-bred physician will be an ornament to society. He will be the people's friend and advisor. When he enters the house of his patients, or when the inmates of the hospital hear his steps in the corridors there will be rejoicing. His very presence will inspire confidence and hope in them. They will willingly submit to

his orders and instructions. They will read truth and consolation in his countenance. In return, he will enjoy his vocation. His life, though full of hardships, will bring pleasures that riches can not buy, and when his career on earth is ended and he closes his eyes in that sleep that knows no waking, I am certain that his heart will be at rest. He has, indeed, faithfully served both God and man.

SOCIETY PROCEEDINGS.

Michigan State Medical Society.

Thirtieth Annual Meeting, held at Bay City, June 6-7, 1895.

FIRST DAY—MORNING SESSION.

The society convened in the Madison Avenue M. E. Church, and was called to order by the PRESIDENT, DR. H. O. WALKER, of Detroit.

Prayer was offered by REV. M. C. HAWKS. This was followed by an Address of Welcome by EX-CONGRESSMAN T. A. E. WEADOCK, who trusted the meeting would be one of great intellectual profit to those in attendance. He said that Bay City considers it an honor to entertain such a distinguished body of men. He spoke of the pulpit, the bar, and of medicine, holding that they all aimed to uplift mankind. The professions should act together for honorable and honest dealings. He closed his remarks by welcoming the society to the city.

DR. A. F. HAGADORN, on behalf of the Bay County Medical Society, then extended a hearty welcome to the city. He said a very warm feeling exists in Bay City toward the State body.

The Executive Committee then reported the different arrangements that had been made to entertain the society outside of business hours. The Masonic and Bay City Clubs were accessible; the steel and wooden shipyards were open; the sawmills and the salt blocks might be visited, and the carriages of the people of the city would be at the disposal of the visitors Friday morning at the hotel doors to take them around the city.

The SECRETARY, DR. CHARLES W. HITCHCOCK, of Detroit, read his annual report. It told of the benefit to be derived from the passage of a bill to create a Board of Medical Examiners, but inasmuch as Governor Rich had just vetoed the bill, that portion of the report, he said, would have to go for naught. The Secretary further reported that owing to the inaccessibility of portions of some counties, it had been impossible to get local societies organized. He cited one case where one side of a county had a well-organized society, while the doctors of the other side were not members because they could not conveniently attend the meeting. Dr. Hitchcock urged that more effective work be done by forming a society in every county in the State.

On motion, a committee consisting of Drs. Boise, Connor, Patterson, Newkirk, and the Secretary, were appointed to devise some means to increase the membership of the State Society.

The report of the TREASURER, DR. WM. G. HENRY, of Detroit, was read by the Secretary, owing to the fact that Dr. Henry was confined at home by sickness. The reports were adopted.

During the morning session the Committee on Admissions reported favorably on several applications for membership.

The Committee on Necrology gave short sketches of twelve deceased members.

Under the head of reports of Special Committees the following were adopted: 1, to memorialize the Legislature in reference to the bill for the prevention of blindness; 2, to take action on establishing a Bureau of Public Health; 3, to petition the Legislature with reference to an improved plan for registering births and deaths.

The Committee on Legislation told of the hard work it had to do, in order to have the Legislature pass the bill creating a Board of Medical Examiners, and when it was announced that all the work had amounted to nothing because Governor Rich had seen fit to veto the measure, the news was received with hisses.

DR. DONALD MACLEAN, of Detroit, called the attention of the Society to the advisability of reverting to the old method of electing officers, by which nominations are made in open session.

The following amendment was adopted: To change Article V, Section 1, of the Constitutihn, so as to read: "To facilitate professional and scientific work, three Sections are established, namely: 1, Section on Medicine and Obstetrics; 2, Section on Surgery and Ophthalmology; 3, Section on Abdominal Surgery and Gynecology."

The amendment to add to Article II, of Section 1 of the Constitution, "Provided that no alien can become a member of this Society," was lost.

A committee of three was appointed to take into consideration the question of undertakers embalming bodies. The point aimed at is to see if some preservative aside from arsenic can not be employed.

PRESIDENT WALKER announced that it would be necessary for him to leave the city in a few hours, and asked permission to deliver his address, which was granted.

In his remarks he touched on general topics, and among other things he said: Should we make an inventory of the progress of medicine and surgery, we will find that the advance in our profession during the last fifty years is far beyond that of any previous half century. In fact, our authorities comprise but few men, while to-day the life of an authority is of short duration, for intense active criticism is such that no observation is accepted as true, until it has stood the test of crucial criticism. This progress is largely due to the aids that have been given us through the discovery of anesthetics and a more accurate knowledge of disease, thereby permitting the surgeon the greatest opportunity for exploration and the physician the widest field for experimentation with remedies. Sims, through the invention of his duck-bill speculum, and the employment of the silver wire suture made him master of a class of operations that had heretofore been failures. Speaking of silver wire as a suture, it is undoubtedly the best and safest owing to its being easily made aseptic. We notice that many surgeons are for this reason returning to its use. The introduction of anesthetics, such as nitrous oxid in 1844, ether in 1846, chloroform in 1847 and cocain in 1859, made it possible for many operators rather than the few, such as flourished in the days when it was necessary to immobilize the patient with buckles, straps and other apparatus. Surgery had now entered upon a new era when greater care in detail of manipulation could be exercised rather than manual dexterity. Yet ideal surgery was not realized until the advent of antiseptics, due to the efforts of Pasteur through his studies of spontaneous generation, when after twenty years of investigation in 1878 he announced his results to the Paris Academy of Medicine; that which overthrew the doctrine of spontaneous generation, and established a pathology founded upon bacteriology. This study of bacteriology has opened a still wider field of investigation and made it necessary that we must have at least a thorough theoretical knowledge of the subject to appreciate its importance, while every progressive surgeon and physician must do practical work in the bacteriologic laboratory. Suppuration twenty-five years ago was the rule and meant a fight to the death of either the phagocyte or bacterium. Pus is dead phagocytes, the prevention of which is the aim of the surgeon; how well he does it is shown by results. Antisepsis and asepsis are too often a farce. Few but believe in its efficacy, yet how few accomplish it, simply from a failure to follow out every detail, for a weak link in a chain makes the whole worthless. The knowledge of the bacteriologist has made surgery what it is to-day, a nearly perfect art. All reverence to Pasteur and Lister!

How is it with the pathology of the internal organs? The toxins of the microörganisms producing typhoid fever, cholera, diphtheria, etc., are gradually becoming better understood and immunity by inoculation promises much. Jenner by accident gave us the first evidence of immunity which has been used empirically for nearly a century, and is now regarded as a scientific application of the principles of bacteriology. It is hardly necessary to measure the results by this method in the treatment of hydrophobia. We have not, however, been as successful with the uses of certain remedies against tuberculosis, yet much is promised by the nucleins. Serum-therapy evidently possesses great advantages in combating diphtheria; it has not, however, stood the test of crucial criticism as yet. This intense investigation has developed a large body of specialists who in many departments have done the great wonders of our profession. Yet with all due respect to the specialist I can not but feel the furore in some instances goes beyond its environment and has done much to injure true conservative surgery and medicine. A specialist is not made in a day. He should be the product of scientific evolution. The laxness of the laws governing the practice of medicine in this country is gradually disappearing.

The adoption by a great majority of the medical colleges

of the United States of a four years' graded course is another step in the proper direction, and a still further advance should be a more rigid entrance examination; a thorough scholastic training, a knowledge of biology, botany, chemistry and bacteriology should be a part of the requisites for entrance, and not a part of the curriculum of a medical college.

Recently I sent out a circular letter to all of the regular practitioners in this State outside of our own membership, inviting them to become members of the society. I have received many responses of promises to attend, and others who find it inconvenient to be here at this time, asking if it is not possible to become members upon application without being present. I would suggest that a resolution be offered at this meeting making it possible for a regular practitioner of this State to become a member by application on the recommendation of two members and referred to the Committee on Admissions, who should have power to pass upon their eligibility, notifying the Secretary of their action. In this way we would secure a larger membership and a larger attendance in the future.

"I have some hesitancy in presenting what I am about to do, that is in suggesting the doing away with our Section work. There are many attending these meetings who would like to hear all the papers read, for the general practitioner comes here for the purpose of absorbing as much medical and surgical knowledge as possible, which he can not do when the work is going on in different places at the same time. Make the session three days; the morning of the first day for general business reports of committees, etc., on the opening of the last day and the rest of the time devoted to scientific work. It gives the writer of a paper an opportunity to be heard by all and not by a corporal's guard as is often the case in our present plan of Section work. I am aware that there will be opposition by many to this proposition, yet I think the majority will agree with me.

Dr. Walker concluded by quoting Joaquin Miller's poem, "Down in the Dust."

FIRST DAY—AFTERNOON SESSION.

In the Section on Surgery, the following papers were read and discussed: A Plea for the Employment of an Almost Discarded Method of Treating Urethral Strictures, by Dr. C. B. Nancrede, of Ann Arbor; Treatment of Urethral Stricture, by Dr. E. T. Tappey, of Detroit; The Cystoscope and its Limitations as a Diagnostic Aid, by Dr. F. W. Robbins, of Detroit; Methods of Relief in Prostatic Obstruction, by Dr. Wm. N. Wishard, of Indianapolis, Ind.; Operations on the Prostate, by Dr. H. O. Walker, of Detroit.

Papers were read and discussed in the Section on Medicine as follows: The Etiology of Diphtheria, by Dr. F. G. Novy, of Ann Arbor; Its Diagnosis, by Dr. C. H. Johnston, of Grand Rapids; Treatment, General and Medicinal, by C. G. Jennings, of Detroit, and Treatment by Serum, by Dr. C. T. McClintock, of Ann Arbor.

In the Section on Midwifery and Gynecology, papers were read on Malignant Diseases of the Uterus, as follows: Pathology, by Dr. J. B. Whinery, of Grand Rapids; Etiology, by Dr. E. G. Minar, of Bay City; Diagnosis, by Dr. Eugene Boise, of Grand Rapids; Surgical Treatment, by Dr. J. H. Carstens, of Detroit. Palliative Treatment, by Dr. H. W. Longyear, of Detroit.

FIRST DAY—EVENING SESSION.

The evening session was presided over by Dr. Victor C. Vaughan. The session took the form of three addresses.

DR. SCHUYLER C. GRAVES, of Grand Rapids, after a pleasant introduction to his address

THE POETICAL IN SURGERY

said in part:

As to title, novelty will certainly be granted, because the laity, and, for that matter, many medical men and women as well, have never thought of any possible connection between the "ars poetica" and the "ars chirurgica."

Science is knowledge, nothing more or less. Art is the application of knowledge. Art is the ability to make manual application of the principles perceived by science. For instance—the knowledge that drainage is one of the greatest of the underlying surgical principles in science. The application of this principle to any individual case; that is, the securing of the conditions necessary for its operations, art, and the better this is done the more artistic the action.

Surgery, then, is a science and an art. As a science, however, surgery is purely professional; but as an art it passes beyond the professional and into the poetical. Inasmuch as poetry is an expression of the good, the true and the beautiful, surgery, if poetic, must, also, be a reflection of the same attributes. Let us see. Surgery is good, because it relieves suffering and saves life. Surgery is true, because it falters never in the steadfastness of its purpose. Surgery is beautiful, because it exhibits results which are pleasing to the eye, and to the mind and heart as well.

To many people, thoughts of surgery are associated with such matters as pain and blood and pus, and tumors, and deformities, over which the bird of poesy's paradise does not seem to spread her irised wings; but these things do not constitute the sum total of surgery, and in the contemplation of our theme we must remember that such matters are, ofttimes, bnt the means to an end; ofttimes, the very stimuli to poetic effort. They are but the marble dust and clay on the floor of the sculptor's workshop; the daubings of color on the palette of the painter.

DR. C. B. BURR, of Flint, delivered the Address on Medicine. He selected for his subject,

SOME CURRENT ERRORS RESPECTING INSANITY.

He said it was a grave error to believe in harmless lunacy; that the existence of an insane delusion was a menace to the community's safety. Graveyards are recruited constantly through the conduct of the harmless cranks, sane on all subjects but one. He asked the question: "What marked kinship exists between genius and insanity?" and answered it thus: That geniuses become insane through too close application in some particular mental groove is possible, but I am indisposed to think that the existence of genius, properly so-called, is a menace to the person's well-being. If his inventive or his literary efforts occupy his entire working hours, interfering with his rest at night, prevent him from exercising and taking food at regular periods, the physical cause for insanity becomes operative. If he occupies himself in one line to the exclusion of every other diversion and mental exercise, his horizon will be apt to become contracted but this does not constitute insanity.

Great geniuses have usually been great brain workers, have frequently burned the nervous candle at both ends, have too often resorted to stimulants and opium to excite imaginative power, have led profligate and dissolute lives under the temptations and flattery with which they were surrounded, and have placed themselves under conditions which jeopardize the integrity of the nervous system.

That there is any legitimate relationship between genius and insanity, may be disputed. I have never in my experience discovered such connection.

I think there is a general error respecting the relative liability of brain workers and hand workers to insanity. As a matter of fact, hard manual labor appears to break down more men and women proportionately than brain work.

Another error is the belief that insanity is increasing to an alarming extent. That there is a relative increase in nervous diseases is probable. This is due to the absence of any legal restriction upon marriage and the unchecked propagation of the defective classes. I am inclined to the belief that diseases which the alienist is called upon to treat, display in recent years a greater tendency to assume organic forms. From this tendency which must operate to shorten life and diminish productivity it is perhaps safe to credit a diminution in the number of those nervous diseases in which heredity plays so important a part.

Dr. Burr, in closing, said that one of the greatest errors was the admission of inferior classes of foreigners who are permitted to become residents of the United States.

DR. W. H. YOUNG, of Nashville, read the

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of the Section on Midwifery and Gynecology. Among other things Dr. Young gave expression to the following views and ideas:

I hold that no person can be thoroughly equipped in gynecology whose mind has not been expanded by a general practice, sufficient to enable him to grasp the human system as a whole, and not merely as a part of it. Without such training, the specialist is liable to see and to interpret things in the dim light of his own limited sphere, and to forget that the human body consists of and contains more organs and performs more functions than is dreamed of in his philosophy.

To be a successful specialist, be that gynecic or whatever else it may be, requires that the mind and modes of reasoning be so fully developed that he may not be blinded to the fact that all headaches are not caused by errors of refraction, to be cured by the proper adjustment of the lenses, or that all pains in the head and back of the female are necessarily due to some organic or functional derangement of the generative organs.

SECOND DAY—MORNING SESSION.

PRESIDENT WALKER called the general session to order. The following officers were elected:

President—Victor C. Vaughan, Ann Arbor.
First Vice-President—H. McColl, Lapeer.
Second Vice-President—R. W. Erwin, Bay City.
Third Vice-President—F. B. Tibbals, Detroit.
Fourth Vice-President—F. G. Novy, Ann Arbor.
Treasurer—William G. Henry, Detroit.
Secretary—C. H. Johnston, Grand Rapids.
Judicial Council—Henry B. Baker, Lansing; Francis A. Rutherford, Grand Rapids; Wm. T. Dodge, Big Rapids.

The officers of the sections are: on Medicine, Chairman, David F. Stowe, of Bay City; Secretary, A. P. Biddle, of Detroit; Orator, H. H. King, of Grand Rapids.

Surgery, Chairman, D. M. Greene, Grand Rapids; Secretary, A. F. Bulson, of Jackson; Orator, C. H. Baker, Bay City, Mich.

Gynecology, Chairman, F. G. Minor, Bay City; Secretary, J. B. Winnery, Grand Rapids; Orator, Reuben Peterson, Grand Rapids.

Mt. Clemens was chosen as the next place of meeting.

Under the head of "miscellaneous business" the Constitution relative to the election of President, Vice-President and Secretary was changed so that, hereafter, on the morning of the first day's session, the nominations for these offices are to be made in open session.

After the adjournment of the general session, the Sections reassembled, and the following papers in the Section on Surgery were read and discussed: Shock, W. S. Connery, Saginaw. Cataract—Simple Extraction—Report of One Hundred Cases, Eugene Smith, Detroit. Abdominal Nephrectomy, with Report of a Case, Reuben Peterson, Grand Rapids. Selected Cases of Railway Surgery, F. B. Tibbals, Detroit. Some Reflexes, with Cases to Illustrate, J. A. Porter, Brooklyn. Deafness; what are we doing to Prevent It? W. F. Strangways, Flint.

The Section on Medicine. The Public Care of Epileptics, by Colonization, W. M. Edwards, Kalamazoo. Friedreich's Ataxia, with Cases, Sidney I. Small, Saginaw. Some Forms of Trophic Neurosis, with an Illustration, W. J. Herdman, Ann Arbor. A Case of Insanity during Pregnancy, W. G. Henry, Detroit. Nuclein in Tuberculosis, with Report of Cases, H. M. King, Grand Rapids.

The Section on Midwifery and Gynecology gave the following papers: Retro-displacements of the Uterus, J. L. McLaren, Saginaw. Surgical Treatment of Ectopic Pregnancy, J. G. Lynds, Ann Arbor. Ectopic Pregnancy, Hugh McColl, Lapeer. Some Points Relative to the Use of Forceps, C. H. Johnston, Grand Rapids.

SECOND DAY—AFTERNOON SESSION.

The reading of papers in the Section on Surgery was continued: Extraction of Biliary Calculus from the Common Duct, T. A. McGraw, Detroit. Reports of Interesting Cases, D. Milton Greene, Grand Rapids. Some Features of Strabismus, Leartus Connor, Detroit. An Analysis of Twenty-five Cases of Appendicitis, Schuyler C. Graves, Grand Rapids. Neuro-Retinitis with Special Reference to the Monocular Variety, A. E. Bulson, Jackson. Pathologic Lesions of the Inferior Maxillary Bone, with Report of a Case, E. B. Smith, Detroit. An Unusual Fatal Aural Case, Luke E. Schell and Don M. Campbell, Detroit.

The Section on Medicine read and discussed the following papers: A Case of Multiple Sarcoma, W. F. Breakey, Ann Arbor. The Present Management and Treatment of Croupous Pneumonia, D. S. Campbell, Detroit. Salicylic Acid in Pleurisy and other Diseases with Serous Effusion, George Dock, Ann Arbor. Rheumatism; Its Pathology and Modern Treatment, E. S. Pettyjohn, Alma. The Nervous Symptoms of Gout, David Inglis, Detroit. Personal Experiences Regarding Altitude in Organic Cardiac Disease, Hugh McColl, Lapeer.

The Section on Midwifery and Gynecology read and discussed these papers: Ultimate Results, Physical and Mental, in Gynecologic Operations, Eugene Boise, Grand Rapids. Menopausal Polysarcia Abdominalis, Walter P. Manton, Detroit. Ventro-fixation of the Uterus, J. J. Mulheron, Detroit. The Status of the Buried Animal Suture and Ligature in Abdominal and Gynecic Surgery, H. W. Longyear, Detroit.

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Medical Society of the State of Pennsylvania.

Proceedings of the Forty-fifth Annual Meeting held at Chambersburg, Pa., May 21, 1895.

[Special correspondence of the JOURNAL.]

(*Continued from page 939.*)

DR. KATE D. MIESSE of Easton, read a paper on "Nerve Muscle Atony in Girls."

DR. J. N. HUNSBERGER of Skippack, a paper on "Aconitin in Neuralgia." He spoke of the treatment of the causes of the different neuralgias. The use of aconitin was briefly outlined, and he gave a short description of the physiologic action of this drug, and a report of his clinical experience with it.

DR. E. V. SWING of Coatesville, read a paper on "Rational Treatment of Fracture of the Femur near the Hip-joint in Aged Persons." The Doctor briefly related the history of eighteen cases of what is usually called "intra-capsular fracture femur," and advocated complete freedom in bed, on a cotton or hair mattress, without any attempt at extension and counter-extension, as giving almost the only promise of life, the old treatment being almost invariably followed by exhaustion and death.

At the afternoon session DR. L. H. TAYLOR of Wilkesbarre, read the

ADDRESS IN OTOLOGY.

He referred briefly to the work of his predecessors, and then discussed the operation on the bones of the middle ear, quoting at some length the reports of Drs. S. MacCuen Smith, Grunert, Blake, Gomperz, Randall and others. He takes a conservative view of the operation and believes it should not be resorted to, until all proper remedial measures have first been tried. He thinks the operation in non-suppurative cases will soon be abandoned.

The work of the general practitioner in ear diseases should be in the line of prevention, *i.e.*, such treatment of acute otitis media as will make subsequent operation unnecessary. He highly recommends early paracentesis of the membrane and thorough attention to cleanliness, with instillation of a few drops of a 4 per cent. solution of cocain in Magendie's liquor morphiæ, to relieve pain. He also urged especial attention on the part of the general practitioner to treatment of catarrhal troubles of early life, as a means of preventing chronic deafness—the majority of such cases being caused by catarrh of the nose and throat.

The work of the rhinologist can not be separated from that of the otologist; operations on hypertrophied turbinates and deviated septa, to secure patency of the nasal passages, being an essential part of the treatment of chronic deafness. He uses Dench's apparatus for inflation of the Eustachian tube in preference to Politzer's air bag.

Mastoid disease was referred to briefly, recommending the general practitioner to perform Wilde's incision early rather than wait to send the patient to a specialist for opening of the mastoid. The address closed with a short discussion of foreign bodies in the ear.

DR. JOSEPH MCFARLAND of Philadelphia, presented a paper on "Bacteriologic Examinations in Medicine or Surgery." He commented on the necessity for accurate systematic study of cases, not only by observation and physical examination, but also with the microscope and culture media, so that unexpected but likely important etiologic factors may be detected. He suggested the organization of laboratories by county and other medical societies, who shall buy and own the necessary apparatus, and delegate the work to some competent member who shall receive sufficient compensation to enable him to devote a necessary amount of time and labor to the work. The ideas contained in the paper refer more especially to the organizations in rural districts than to those in cities. For the establishment of the work, and its inception, reference can be made to the gentlemen who have offered their services to the State Society through Dr. Stevens, and who will gladly visit any society and tell them how to start and maintain a laboratory.

DR. JEAN SAYLOR-BROWN of Williamsport, read a paper on "Relief of some Cases of Functional Nerve Troubles by Curing Eye Strain." He gave a list of a few serious cases cured by relieving eye strain; notably, one of tic douloureaux, several of diabetes, and one simulating Basedow's disease, with entire inability to walk, caused by injury to the brain.

DR. H. G. CHRITZMAN of Chambersburg, presented a paper on "Faith and Therapeutics."

DR. H. M. ALEXANDER of Marietta, on "Vaccine Virus," showing the dangers of impure virus, the need of care in the culture of bovine virus, etc.

DR. H. A. ARNOLD of Ardmore, discussed the subject, "Whither are We Drifting?" He described the characteristics of the medical man in mediæval times, and again at a later period. He compared medicine and medical men of those times with the present. The present evil is the secret processes of manufacture, private formulæ, and the large space devoted to them in the medical journals. Is the practice of medicine soon to become nothing more than the means of finding a market for the wares of a host of unknowable medicine makers? Should the wholesale production of new "ines" and "antis" continue, and the flood of literature distributed through the mails be augmented? May it not be possible, in the near future, to discontinue the study of materia medica at our medical schools, and give the time to etiquette, society manners and other nice little things so necessary to attain prosperity?

DR. H. A. MOWERY of Marietta, on "Typhoid Fever."

DR. A. ENFIELD of Bedford, read an article on "Auto-Intoxication with Special Reference to Certain Diseases." He asserted that no germ can produce disease by itself. That the vitality and stamina or resisisting power of man must first be broken down before a germ can effect entrance to the tissues. We do not always escape typhoid fever when we have pure water. The fact that the germ of typhoid fever has been found, does not prove that this germ is the pathogenic agent. We have found cases of typhoid fever developing long after all sources of possible infection have been removed. The development of disease is not due alone to chance meeting of man and microbe. No one pathogenic agent or condition is sufficient to produce disease. Man contains within himself the causes for most of his sickness. All diseases that have their origin in auto-intoxication can be controlled by the free administration of intestinal antiseptics.

DR. GEO. E. SHOEMAKER presented a paper on

VENTRO-FIXATION OF THE UTERUS.

Retroversion with descent of the ovaries or of the uterus is a prominent factor in a large number of chronic gynecologic cases. The condition is not fully described by the term retroversion, but is far from a simple one. Treatment confined to the perineum, if that is lacerated, to the endometritis or pelvic congestion, will produce no permanent change if adherent retroversion persists. The pessary can only be used when adhesions are absent, inflammation is slight and the organs capable of being thoroughly replaced. In a few cases, watched, it gives all the relief necessary. It cures only minor cases and these very seldom.

Practically, many cases apply from remote districts, or who are obliged to labor, or to whom months of rest with palliative treatment are out of the question, and then the surgeon's experience teaches that long-continued minor treatment will fail. Graver degrees of retroversion accompany conditions practically incurable without surgery. What shall it be?

The operation for shortening the round ligaments in the inguinal canals is limited to the cases without adhesions, and where the tubes and ovaries are known to be normal. These are not the most important cases. If thoroughly done it weakens the canal almost as much as a celiotomy weakens the abdominal wall.

Ventro-fixation is especially adapted to the adherent cases. Tubes and ovaries buried in inflammatory adhesions can be freed and treated. The bladder is not hampered greatly, as it widens in filling. Cases of the writer's hold six, eight or more ounces almost from the start. The attachment elongates into a muscular band which allows uterine and bladder movements. Prognancy is not interfered with, except in probably increased vomiting and traction in early months. The band elongates and again shrinks.

Remote results in relieving symptoms are excellent in the writer's experience; but only cases should be chosen where the symptoms are due to the uterine condition. Minor retroversion may exist *per se* without symptoms.

Ventro-fixation is accessory to curetting and packing for endometritis, to perineal repair and other measures. Descent of the uterus below the pelvic outlet demands other treatment.

The method followed by the writer includes the buried silkworm gut suture through the rectus muscle and its sheath for the entire wound. The second and third sutures below include the fundus uteri. None of these sutures have ever required removal.

DR. S. MACCUEN SMITH gave an interesting paper on

EMPYEMA OF THE MASTOID AND ITS RELATION TO ACUTE AURAL DISEASE.

It was formerly taught that empyema of the mastoid could only occur as a complication of a *chronic* suppurative inflammation of the middle ear. While this is usually true, it is now conceded that this purulent invasion often occurs as the result of *acute* suppurative otitis media. This inflammation may arise either by direct continuity of structure, by infection through the venous circulation, or through the nutrient vessels which traverse the canaliculi and pass from the carotid canal to the mucous lining of the tympanic cavity. This extension of the inflammatory process may be prevented or promptly relieved, by intelligent action on the part of the attending physician.

Out of eleven cases of mastoid empyema, arising from acute otitis media, four showed only a superficial abscess, five were confined to the mastoid antrum, and two extended into the mastoid cells. In the four cases of superficial abscess the pus had burrowed its way through the thick outer walls in less than one month, and a Wilde's incision was sufficient to establish free drainage. In the remaining seven it was necessary to trephine the mastoid. It is difficult to account for the extensive destruction to the soft parts and to the dense bony walls, which may occur in a very brief period. It is also difficult to explain why the confined pus should burrow out through a very thick plate of bone, instead of penetrating through the thinner osseous wall that separates the mastoid and middle ear cavities from the interior of the skull.

The points to be noted are: 1, the fact that mastoid complications do frequently develop from *acute* inflammation of the middle ear; 2, the necessity for prompt recognition and relief of *acute* inflammatory disease of the ear; 3, immediate evacuation of pus when present.

DR. S. D. RISLEY read a brief paper on

OCULAR AFFECTIONS ASSOCIATED WITH LITHEMIA.

Disclaiming any purpose of discussing all the protean manifestations of the gouty or rheumatic dyscrasia, he pointed to the fact that many of the minor discomforts and affections of the eye found their *fons et origo* in fleeting and recurring attacks of lithemia in persons who have acquired the diathesis by sedentary habits, imprudence in diet, by chronic malarial poisoning, syphilis, etc., or are victims of hereditary liability. Fleeting attacks of conjunctivitis which not infrequently pass for catarrh of the conjunctiva, hyperemia of the uveal tract which may develop the milder forms of recurrent iritis, or even more violent attacks, are frequently due to this systemic condition, and not infrequently their essential nature passes unrecognized. Many patients with weak eyes and low grades of refractive error, receive correcting glasses for the relief of their tender eyeballs, periorbital neuralgias and occipital headache, when they might be spared the incubus of a pair of glasses, certainly for constant wear, if due attention had been given to this constitutional malady. Cases were briefly related to illustrate the various phases of the teaching. Unfortunately, its manifestations were not confined to these milder forms of eye disease, but were very frequently at the foundation of the most rebellious and fatal forms of ocular affections. The serious involvement of the general vascular tree, in the more advanced stages of lithemia, was mentioned briefly, and the great liability of the vessels of the choroid and retina to participate in the general disaster urgently insisted upon as of great importance in the study and treatment of many forms of eye disease, occurring during and after middle life, in patients afflicted with the gouty or rheumatic diathesis. It stood second only to syphilis in the etiology of iritic disease. The impairment of the nutrition of the eyeball consequent upon the disease of the choroidal and retinal vessels, rendered it especially liable to choroiditis, hemorrhagic retinitis, incipient cataract, and the more vicious forms of glaucoma. It was this state of the ocular circulation which not only was the origin of many cases of these perilous forms of disease, but which rendered them so fatal to vision and so slightly amenable to all purely local treatment. It was the frequency of such participation in general disease which made it necessary for the ophthalmic surgeon to be also a wise physician. There was no room, anywhere, for the specialist who divorces his special work from the broad field of medical science.

DR. J. K. YOUNG of Philadelphia, read a paper on "Massage in Surgery," in which he reached the following conclusions:

1. Massage as an adjunct in the treatment of surgical disease is apt to be overlooked by the surgeon.

2. Its field of application is very large, including the diseases of the joints, traumatisms, after operations, and diseases of the nervous system.

3. Its mode of application differs in the different conditions, and must be understood to obtain the best results.

4. The advantages to be gained by its more frequent use are more rapid and complete recovery from surgical disease.

Dr. E. E. Montgomery, of Philadelphia presented the subject "When should Vaginal be Preferred to Abdominal Incision in the Treatment of Pelvic Disease?" Dr. Montgomery advocated vaginal incision in all collections of pus in the pelvis which could be readily reached through the vagina, and said that this method of treatment in the majority of cases afforded a decreased danger to the patient and an opportunity for recovery without sacrifice of important organs. Its practice does not add to the danger of an abdominal operation if the latter is necessary for the cure of the patient. Where the uterus is the source of infection, as in puerperal sepsis, and the sacrifice of the tubes and ovaries is indicated, he would also extirpate the uterus and do the operation per vaginam.

Dr. Charles P. Noble, of Philadelphia, read a paper upon the subject of

MOVABLE KIDNEY,

and the following are his conclusions: Movable kidney is a very common condition among women. I find it in one-fourth of my own patients. Both kidneys are movable in about one-tenth of the cases. The underlying cause of movable kidney is a deficiency of adipose tissue, especially in the peri-renal region. Tight lacing, multiple pregnancies and falls, occasionally act as contributing causes. The symptoms of movable kidney are both reflex and local. The reflex symptoms are those, at times, of neurasthenia, irrespective of its cause. In other cases, nervous dyspepsia, palpitation of the heart; distension of the abdomen with gas and neuralgic areas are the symptoms complained of. Patients usually are unable to lie upon the side opposite to the movable kidney. The local symptoms are a sense of weight or bearing down, soreness in the kidney region, attacks of pain similar to renal colic, and in rare instances symptoms of strangulation due to torsion of the vessels of the kidney.

Movable kidney may be suspected when its rational symptoms are present, but the diagnosis must be made by a physical exploration. This should be made with the patient in a standing position. The diagnosis can be made with the patient lying on her back only in long standing cases, where the displacement is extreme, as usually in this position the kidney slips up under the margin of the ribs. In many cases movable kidney gives rise to no symptoms, and therefore does not require treatment. The rest cure promises to be efficient in cases of slight degree, as the kidney returns to its normal position while the patient is lying on her back, and the increasing fat which the rest cure usually brings about should effect a cure. The rest cure used in cases of long standing, with extreme displacement of the kidney, will improve the general condition of the patient but will not improve the local trouble. Nephrorrhaphy is a simple and safe operation, which should be done in the cases having well-marked displacement, that is three inches and upward. The more marked the local symptoms the more necessary the operation. The reported cases indicate that the results are permanent.

One object of this paper is to emphasize the great frequency of this condition, and the ease with which it can be diagnosticated. Also, to urge upon those who have not done so, the necessity for studying its relation with the various reflex and nervous symptoms met with in thin women.

Dr. Louis J. Lautenbach, of Philadelphia, read a paper on

DEAF MUTES—CAN THEY BE MADE TO HEAR?

During the past sixteen months the Doctor has had under treatment six deaf mutes. All of these he has treated by massage methods—phono, pneumo and mixed massage. In all there has been some improvement in hearing; in three the improvement has been very noticeable. From the study of these cases he has derived the following conclusions:

1. That no negative opinion as to the results of treatment can be considered as justified, even when all our ear tests fail to indicate the slightest trace of hearing power.

2. That every deaf mute should have his ears thoroughly examined, the proper treatment instituted, and that this treatment should consist not only of former methods but should include pneumo, phono and mixed massage treatment.

3. That as a result of this method of treatment, favorable effects have been obtained which have not been realized by any former treatment.

4. That in the present status of our knowledge, we know not to what extent the power of hearing may be developed by this method; the lack being occasioned by the need of a greater period of time to allow of the further development of the hearing function.

5. That even though the hearing of deaf mutes be not restored to normal or anywhere near thereto, yet the hearing powers as developed during the comparatively short period that this method of treatment has been in use, would prove of great value to the deaf mute, not only in the development of his speech functions and in the protection of his person from external injury, but would be of great value to his family and friends in their more ready communication with him.

6. That through the improvement by the massage treatment the teaching of deaf mutes of the lip-reading method and the utterance of sounds in accordance with it, this teaching can be more readily accomplished and more deaf mutes thus be given the advantages of such education.

On motion, the Committee of Publication were given discretionary power to issue the proceedings in journal form.

On motion of Dr. Benjamin Lee, of Philadelphia, it was unanimously

Resolved, That the Medical Society of the State of Pennsylvania believes that the time has arrived when questions of public health should be decided and administered by an authority at the National Capital, constituted for that purpose solely; and therefore urges upon the representatives of the State, in the Congress of the United States, the importance of sustaining the movement already inaugurated for the establishment of a Department of Health at Washington.

On motion of Dr. I. C. Gable, of York, it was resolved that this society respectfully suggests to the State Board of Health that the sanitary condition of the establishments for propagating vaccine virus should be subjected to frequent inspection; that we will be ready to coöperate with the board in any measures which may be necessary to provide for such action.

On motion of Dr. S. S. Towler, of Marienville, it was

Resolved, That the Medical Society of the State of Pennsylvania congratulates the American Medical Association upon the decision of the Trustees to exclude unethical advertisements from the Journal of the Association.

Resolved, That a committee of three be appointed to communicate with the editors of the medical journals of the United States, calling their attention to this action of the Journal of the Association, and requesting them to accede to the wishes of the profession by adopting a similar rule.

Committee—Drs. Towler, C. H. Thomas, of Philadelphia, J. J. Buchanan, of Pittsburg.

A resolution indorsing the idea of the individual communion cup was laid on the table.

On motion of Dr. H. B. Guiher, it was

Resolved, That the Committee on Pharmacy request of the Pharmaceutical Society of Pennsylvania to transmit the constituents, etc., of the newer preparations for publication in our Transactions, etc.

On motion of Dr. J. A. Ehler, of Lancaster, the Secretary, Dr. Atkinson, was requested to prepare a History of the State Medical Society and present it at the annual session of 1896.

Resolutions of thanks were adopted to the ladies, the Committee of Arrangements, the Franklin County Medical Society and the officers of this body for what has been done to make this one of the most successful and enjoyable ever held.

The society assembled May 24, and formally installed the newly elected officers, after which it adjourned to meet in Harrisburg, the third Tuesday in May, 1896.

American Electro-Therapeutic Association.

Fourth Annual Meeting held in New York Academy of Medicine New York, Sept. 25, 26, and 27, 1894.

William J. Herdman, M.D., President.

(*Continued from page 898.*)

THE INCANDESCENT ELECTRIC LIGHT, OR RADIANT HEAT BATH.

This paper was read by Dr. J. H. Kellogg, of Battle Creek, Mich.

Almost since the discovery of the electric light, it has been

made the subject of interesting experimentation for the purpose of discovering whether this excellent artificial substitute for sunlight possessed the property of stimulating the vital processes of plant life in a manner analogous to the action of sunlight. An interesting paper, by Wm. Siemens, published in March, 1880, contained a detailed account of experiments made for the purpose of determining the influence of the electric light upon vegetation, and from which the following conclusions were drawn by the author:

1. That the electric light is efficacious in producing chlorophyl in the leaves of plants, and in promoting growth.

2. That an electric center of light, equal to 1,400 candles, placed at a distance of 2 meters from growing plants, appeared to be equal in effect to average daylight at this season of the year (March), but that more economical effects can be attained by more powerful light centers.

3. That the carbonic acid and nitrogenous compounds generated in diminutive quantities in the electric arc, produce no sensible deleterious effects upon plants inclosed in the same space.

4. That plants do not appear to require a period of rest during the twenty-four hours of the day, but make increased and vigorous progress if subjected during the daytime to sunlight and during the night to electric light.

5. That the radiation of heat from powerful electric arcs can be made available to counteract the effect of night frosts, and is likely to promote the setting and ripening of fruit in the open air.

6. That while under the influence of electric light, plants can sustain increased stove heat without collapsing, a circumstance favorable to forcing by electric light.

Similar experiments have been made by others. The first to make experiments was Hervé-Mangon (Compt. Rend. 53, 243). These experiments showed that the electric light was capable of causing the development of chlorophyl and inducing heliotropism, or the phenomenon of turning or bending towards the light.

Prillieux (Compt. Rend. 69, 410) showed in 1869, that the electric light is capable of promoting assimilation of plants, or decomposition of carbon dioxid and water.

Siemens found that the plants exposed to ordinary daylight and six hours of electric light in addition "far surpassed the others in darkness of green and vigorous appearance generally." Strawberries and other fruits were fully equal to those raised under ordinary conditions, and grapes were of stronger flavor than usual. Melons were remarkably large and aromatic, and bananas were pronounced by excellent judges to be "unsurpassed in flavor."

Many of these experiments have been repeated in this country and with similar results. The most important experiments were those conducted at the Cornell University Agricultural Station in 1889-90. These results showed clearly:

1 That the electric light may be used under such conditions as to make it fairly comparable to sunlight in its power to promote protoplasmic activity.

2. That the electric light acts as a tonic to plants so that they are able to endure adverse conditions which otherwise would cause them to collapse.

3. That the electric light is a true vital stimulus, since the effect of its use at night, upon plants, is essentially the same as that of the longer day of the Arctics upon plants growing in that region.

Another fact of importance which had sometimes been observed, was the deleterious influence of powerful arc lights upon workmen engaged in close proximity to them, effects analogous to those of sunstroke.

Although not fully acquainted with the facts above referred to, when I first began the use of the electric light bath, I had seen brief notices of these experiments, and thereby became interested in the subject from a therapeutic standpoint. For more than twenty years I have made use of the sun-bath as a therapeutic means, and twelve or thirteen years ago experimented with large convex lenses for the purpose of concentrating the sunlight, and thus intensifying its effects in the treatment of neuralgia, spinal and other hyperesthesias. I found good results from its use employed in this way, but did not complete my observations on account of the great amount of time required and the uncertainty of having sunlight at the time desired.

Something more than four years ago I began experiments with single lights provided with reflectors, and soon after I had constructed two cabinets, or small rooms, large enough to contain one person, and arranged in regular rows on the inside 50-60 incandescent lamps. Since that time I have made constant use of the electric light emitted by the incandescent lamp, as a therapeutic means. Together with my colleagues I have employed the bath by this means nearly ten thousand times, and in a great variety of ailments, at the Battle Creek Sanitarium, and have largely used it as a substitute for the Turkish, Russian, vapor, and hot-air baths, all of which I had previously employed for many years. Finding it free from any of the objections to which the baths named are open, for numerous reasons, some of which I will point out subsequently in this paper, and also finding its effects extremely agreeable to patients, and remarkably efficacious in many stubborn cases which did not readily yield to other therapeutic agents, I have employed it much more frequently than I had previously made use of analogous means, and in a much wider range of cases.

My earliest experiments in the use of the electric light bath showed me that it was capable of producing very characteristic effects. This led me to undertake a series of physiologic experiments for the purpose of placing its therapeutic use upon a rational basis, and for the purpose of comparing the effects of the electric light, Turkish, and Russian baths. Some of these experiments were made three years ago; others have been made more recently. The objects of the experiments were to determine the effects of the electric light bath as compared with those of the Turkish and the Russian baths upon:

1. CO_2 elimination.
2. The urea secretion.
3. Perspiration.
4. Surface and internal temperature.
5. The number of blood corpuscles and the amount of hemoglobin. The results of these experiments and the methods employed may be summarized as follows:

1. *CO_2 Elimination.*—Three healthy young men were subjected to the influence of the incandescent electric light or radiant heat bath for five, ten, twenty, and thirty minutes respectively, the time being the same for each, and all other conditions being made as near alike as possible. The same young men were likewise subjected to the influence of the Turkish and the Russian baths for the same lengths of time, but on different days, care being taken to maintain a uniform dietary during the entire series of experiments, at the same hours of the day. The influence of the bath upon CO_2 elimination was determined by carefully measuring with a delicate air meter which I had constructed for the purpose, all the air expired during the ten minutes before the experiment, collecting an average sample of the air for analysis. During the bath the air was collected for the same length of time. In a case in which the bath lasted only five minutes, the figures were doubled so as to make them comparable with the rest. In case the bath continued twenty minutes or more, the air was measured and collected during the last ten minutes; the results obtained were corrected for barometric pressure and vapor tension so that the figures given in the table for the different experiments are, in every respect, properly comparable. The results were as follows:

The average per cent. of CO_2 obtained before the experiment was 3.60.

For the electric light bath the average per cents. obtained were as follows:

5	minutes	4.10
10	"	4.10
20	"	4.20
30	"	5.10 and 5.13

In a repetition of the thirty-minute bath, the higher percentage of 5.13 was obtained.

For the Turkish bath the average per cents. obtained were:

5	minutes	4.03
10	"	4.07
30	"	4.01

For the Russian bath the per cent. was 3.96 for a bath of thirty minutes.

The highest amount of CO_2 elimination was 4.29 liters, which was in the incandescent electric light bath for thirty minutes.

The temperatures of the air in the baths were as follows:

Electric light bath, 28 to 36 degrees C. (85 to 97 degrees F.), or constantly below the temperature of the body; Russian bath, 38 degrees C. (100 degrees F.); Turkish bath, 55 degrees C. (131—155 degrees F.).

2. *Urinary Secretion.*—The following table shows the average figures obtained for the three young men who were the subjects of experiment. The facts determined in relation to the urine were: the amount of specific gravity, the acidity, the amount of urea, the amount of uric acid, the total chlo-

rids expressed in terms HCl, the phosphoric acid and the total solids. The figures given were determined by accurate quantitative analysis of the whole amount secreted in twenty-four hours. The figures obtained in relation to the most important of these quantities were as follows:

Electric light bath:	Urea	26.32 gms.
	Total chlorids	5.25 "
	Total solids	49.30 "
Turkish bath:	Urea	27.39 "
	Total chlorids	6.91 "
	Total solids	52.70 "
Russian bath:	Urea	29.56 "
	Total chlorids	7.60 "
	Total solids	55.14 "

The figures obtained for the urine were the exact reverse of those obtained for the CO_2 elimination.

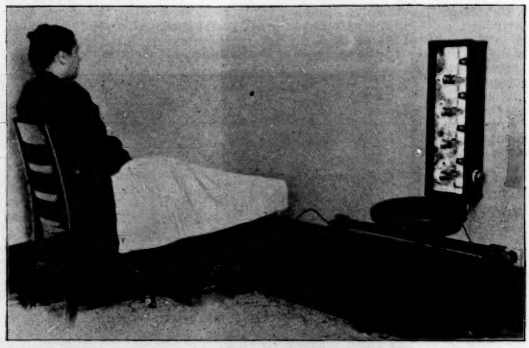

FIG. 1.—Electric Light Foot and Leg Bath, and Spine Bath.

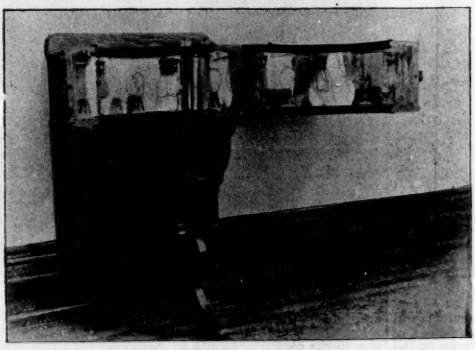

FIG. 2.—Electric Light Trunk Bath.

The diminished amount of urea, total chlorids and total solids present in the urine during the twenty-four hours to which the subject was subjected to the electric light bath was evidently the result of increased elimination by the skin, showing that the electric light bath is much more powerful than either the Turkish or Russian bath as a means of stimulating vicarious eliminative work upon the part of the skin.

The amount of perspiration induced by the incandescent electric light bath was fully double that induced by the Turkish bath in the same length of time.

The amount of perspiration induced by the Russian bath was even less than that induced by the electric light and the Turkish bath.

3. *Perspiration.*—Two points were determined in reference to perspiration:

1. The time required to induce perspiration.
2. The temperature at which perspiration began.

The averages were as follows:

Incandescent electric light bath: time required to induce perspiration, three minutes, thirty-two seconds. The average temperature at which perspiration appeared was 27.2 degrees C. (81 degrees F.).

Turkish bath: the time required to induce perspiration, five minutes, thirty-five seconds. Temperature of the bath, 53.6 degrees C. (128.5 degrees F.).

Russian bath: the time required for perspiration, six minutes, forty-five seconds. Temperature, 101.8 degrees F.

The above figures show very clearly the superior value of the electric light bath as a means of stimulating cutaneous activity.

4. *Surface and Internal Temperature.*—The influence of the bath upon surface and internal temperatures is a matter of importance, since Bouchard has shown that the heat regulating apparatus of the body is called into operation by a rise in the temperature of the blood equal to 40 degrees C. (104 degrees F.).

In experiments made in December, 1891, for the purpose of determining the effect of the bath upon surface and internal temperature, I obtained the following results in a comparative study of the effects of the electric bath and the Turkish bath upon surface and internal temperature.

Electric light bath: temperature of bath, 34.5 degrees C. (94 degrees F.). Internal temperature of subject before the bath, 36.6 degrees C. (98 degrees F.). Surface temperature 35 degrees C. (95.44 degrees F.). Patient began to perspire after one minute. At the end of five and a half minutes he was removed from the bath. The temperature was taken at once and the internal temperature was found to be 37.5 degrees C. (99.6 degrees F.); the surface temperature, 37.9 degrees C. (100.2 degrees F.). Ten minutes after the bath the mouth temperature was 37 degrees C. (98.5 degrees F.); and the axillary temperature was 36.6 degrees C. (98 degrees F.)

Turkish bath: temperature of bath, 70.5 degrees C. (159 degrees F.). Temperature of the subject before the bath 36.4 degrees C. (97.4 degrees F.); axillary temperature 96 degrees F. Perspiration began in five and a half minutes. Immediately after the bath, the mouth temperature was found to be 37 degrees C. (98.7 degrees F.); axillary temperature, 37.2 degrees C. (99 degrees F.). Ten minutes later the mouth temperature was 37 degrees C. (98.8 degrees F.); axillary temperature, 36.6 degrees C. (98 degrees F.).

From these statements it appears that the incandescent electric light bath is far more effective than the Turkish bath in raising both surface and internal temperature, which clearly indicates the penetrative power of the intense heat rays of the electric light.

5. *The Blood.*—The effects of the incandescent electric light bath upon the blood were determined by a careful count of the corpuscles by Gower's instruments and a determination of the hemoglobin by the hematoscope of Henock. The figures obtained showed no very marked increase in either blood corpuscles or hemoglobin, although in one case the number of corpuscles was increased nearly 200,000 per cubic mm.

The physiologic effects of the electric light bath are chiefly those of heat, and do not differ very essentially from the effects obtained from other sources of heat, except that the electric light bath is a much more efficient and convenient method of administering heat than any other which has been devised, with the exception of water, which doubtless has a wider range of use.

The purposes for which heat is applied are usually two:

1. The induction of perspiration.

2. The stimulation of protoplasmic activity, and thus increasing tissue metamorphosis. As before remarked, Bouchard has shown that a rise of temperature of .40 degrees C. (.17 degrees F.) is sufficient to induce perspiration. This rise of temperature may be produced either by artificial heat, by the retention of bodily heat, through diminished heat elimination, or by increased production of heat through exercise or other means.

In the Turkish bath a high temperature of the surrounding atmosphere and a considerable amount of time is required for the induction of perspiration, for the reason that the heat of the air is slowly communicated to the body and the heating of the skin and, through it, the transmission of heat to the blood is directly antagonized by the rapid evaporation produced by exposure to a dry atmosphere whereby the skin is rapidly cooled. This cooling may take place so rapidly, indeed, that a temperature of 500 or 600 degrees F. may be tolerated for a short period without injury, as was illustrated by the Fire King who used to enter an oven with a piece of raw beef and remain until it was roasted.

In the incandescent electric light bath the heat enters the body directly as a radiant force, instead of by the slow method of convection and conduction, thus more rapidly raising the temperature of the blood, and hence quickly inducing perspiration. That heat stimulates vital activity is a fact with which every one who has ever studied the amœba or white blood corpuscle upon the warming stage is well acquainted. The effect of poultices and fomentations in producing pigmentation of the skin, as well as the effects of

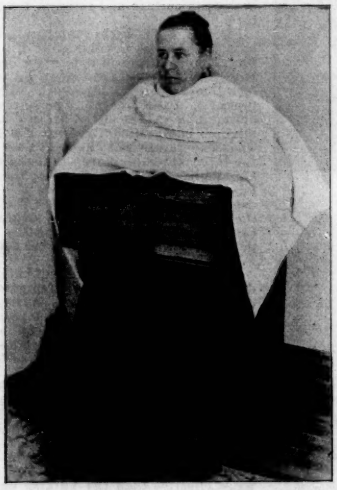

FIG. 3.—Electric Light Trunk Bath, in use.

intense heat, either from the sun or other incandescent sources upon the complexion, afford further evidences of this important physiologic effect of the heat. Entering the body directly instead of slowly working its way through the poor conductors which are found in the successive layers of tissues which compose the covering of the body, the radiant heat of the incandescent electric light, stimulates and vitalizes the tissues to a high degree.

Therapeutic Uses.—I have found the electric light bath of far greater value in the treatment of a great variety of maladies than any other means of applying heat except water, and find that it may be much more generally employed than the ordinary Turkish, Russian, vapor, or hot air baths. One reason of this is the convenience and rapidity with which the degree of heat employed may be graduated by turning on or off one or more groups of lamps, by which means the amount of heat is rendered absolutely and instantly controllable. The source of heat relied upon is the incandescent filaments of the lamps rather than a heated atmosphere, and hence is easily and instantly controllable.

The instant the lamp is turned off, the heat which it has previously emitted is withdrawn from operation. If additional heat is required, the desired number of lamps may be turned on and become instantly operative.

Another reason for the more universal application of the incandescent electric light bath is the fact that when properly applied, its effects are highly tonic in character. A short application of the bath at full force for a time just sufficient to induce powerful stimulation of the skin without provoking perspiration is one of the most effective means of peripheral stimulation with which I am acquainted. The tonic effects of such an application may be still further intensified by instantly following the bath with a cold spray or other cold application, thus producing a revulsive effect of the most agreeable and effective character. The excessive heating of the skin prepares the way for the cold application, without at the same time so overheating and relaxing the blood vessels as to render recovery of the tone of the cutaneous tissues so tardy as to involve the risk of exhausting the patient too greatly or exposing him to the liability of taking cold.

The advantages of the incandescent electric light over the

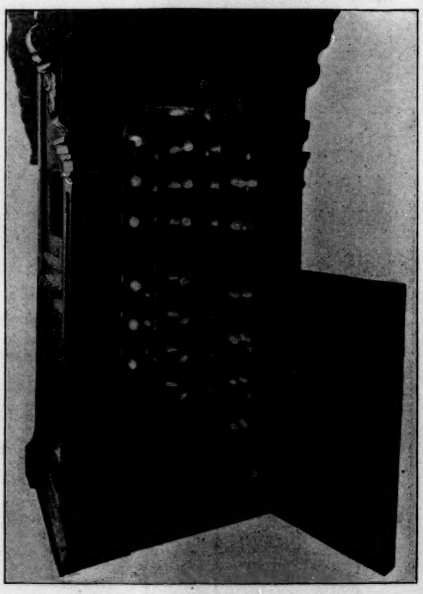

FIG. 4.—Upright Cabinet Electric Light Bath.

arc light for therapeutic applications are:

1. Its superior convenience in application and distribution in the bath.

2. Freedom from the deleterious effects which several observers have noted as due to the arc light when in too close proximity to plants, or when nearer than 2 meters. These effects were found to be not due to the gases given off by the lamp, but to some effect from the light itself. It can not be doubted that similar deleterious effects might follow the use of the arc light when applied for therapeutic purposes if placed nearer to the patient than six feet, a fact which must render its use inconvenient, if not dangerous, to say nothing of the impossibility of securing a uniform distribution in its application.

Still another especial advantage of the incandescent electric light bath over other sources of heat is the facility with which it can be localized. In this respect it is far superior to fomentations or any other local applications. By means of suitable appliances, the heat can be focused upon a small

point if desired, and affects not only the surface, but the deeper tissues. I am sure that the radiant energies of the electric light penetrate these tissues to a depth of several inches. This I proved by actual observation, as before intimated. For deep-seated pain, as well as for the relief of hyperesthesias of the skin, I know of no remedy more valuable. Many applications of this sort have been made by myself and my colleague, more than a thousand in all, and I have constant reason to be grateful for the acquisition of this therapeutic measure, as it has afforded relief to many cases which have stubbornly resisted all other therapeutic means which I have been able to employ.

I append to this paper a report of a number of cases treated by myself and my colleagues at the Battle Creek Sanitarium by means of the incandescent electric light bath and local applications of light, which are simply illustrative of hundreds of similar character which might be given.

Rationale of the Effects of the Incandescent Electric Light Bath.—The peculiar value of the electric light bath I consider due to its efficiency as a source of radiant energy. In the Turkish bath, heat is communicated to the body chiefly by the

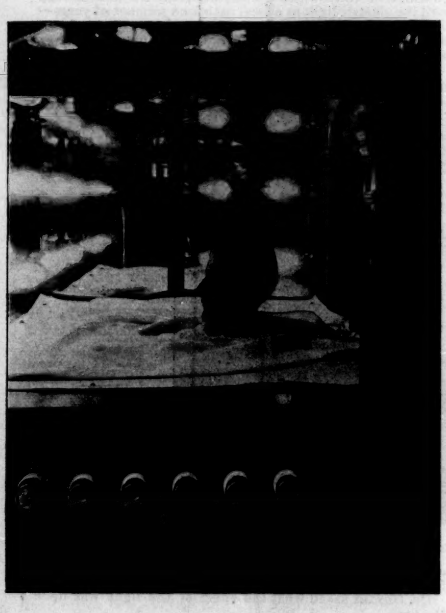

FIG. 5.—Cabinet Electric Light Bath, in use, head excluded.

convection of heat and air. Air being a very poor conductor, communicates heat to the body very slowly. Absorption of heat is further hindered by the skin, an excellent non-conductor, and by the rapid evaporation of moisture upon the skin, whereby it is cooled so rapidly that it is impossible for a man to enter and remain for a considerable time in an atmosphere far above the boiling point. I have several times been in a Turkish bath at 300 degrees and suffered no inconvenience. The heat is derived from the electric light, however, by radiation, and not by convection. The skin, as well as the air, is to a large extent transparent to radiant heat, and the same is true of all the living tissues. This is evidenced by the phenomenon of transillumination. By a speculum placed in the vagina or rectum and a suitably arranged electric light of 16 or 32 candle placed over the abdomen, it will be seen that the whole interior of the trunk is illuminated and made to glow with a bright red light, the red color being due to the reflection from the red corpuscles of the blood. Even the bones are transparent to light when in a living state. This is clearly shown by placing the hand between an electric light and the eye, with the fingers in close contact; the hand being placed near enough to the light, the whole finger will be seen to be illuminated by the light, and not simply the soft parts.

It may thus be said that heat from the electric light penetrates the body just as it would penetrate any other transparent or semi-transparent medium, while the heat of the Turkish, vapor or Russian bath is communicated to the body by convection and slowly works its way into the body by heating the successive layers of living tissue which, although like glass, transparent to radiant energy, also possess to a greater or less degree the non-conducting powers of glass and allied substances. It is true that non-luminous as well as luminous heat waves are thrown off by heated bodies. The whole gamut of radiant energy in the form of heat being stated to consist of fully four octaves, more than two of which are below the red, while a whole octave is above the violet, the luminous range occupying a space only a trifle greater than what would correspond to the chord of the sixth in music. But the lower octaves of these heat waves seem to be far less active than those included within the luminous area and above it. I do not consider that there is any specific effect obtainable from the electric light which would not be derived from any equally efficient source of radiant heat, and on this account I have preferred the term, the *radiant heat bath* rather than *electric light bath*, as the former term leaves room for the employment of any other luminous source of heat, which must possess properties identical with those of the electric light.

One of the great advantages of radiant heat or incandescent electric light bath of the Turkish Russian, vapor, or similar form of bath, is the fact that the body can be subjected to the most intense heat desired without confining the patient, and without overheating the atmosphere surrounding him. This is due to the well-known fact that rays of heat pass through such transparent media as the air without heating them. This accounts for the intense cold experienced by balloonists, and by those who ascend high mountains, even in the tropics. The wood-chopper in the logging camp roasts his back before a big log fire on a cold winter's day, while Jack Frost is taking sharp nips at his nose on the other side. So the man in the incandescent light bath, while perspiring freely, may be surrounded by an atmosphere considerably below the temperature of the body, as shown in my experiments and in the daily application of the bath.

The question of priority in the use of the electric light bath is one in which I am not especially interested, but so far as I know, an empiric in Cincinnati was the first to make use of the arc light for therapeutic purposes. His use of the bath, however, was in connection with the "blue glass" fanaticism which spread so extensively over the country a few years ago, the electric light being substituted for sunlight, a very uncertain quantity at some seasons of the year. His use of the bath was, however, not founded on a scientific basis, and I have always regarded it as unworthy of thought or attention. About four years ago one of my colleagues, Dr. Kate Lindsay, called my attention to the personal benefit derived from the use of the heat of the electric light obtained by the application of a lamp in contact with the body and covered in such a way as to collect and retain the heat derived from it. I learned from several other persons of similar effects obtained in the same way and had constructed a variety of devices for applying heat at once to the different parts of the body, and also had constructed means for general application.

The first bath for general application consisted of a bank of lights, between thirty and forty in number, arranged upon a frame which was hinged upon the wall in such a way that it could be raised and folded back against the wall while the patient was placed upon a suitable couch beneath it. The patient being in readiness, the frame was lowered to a position about six inches above the body of the patient, and the space about the patient inclosed by means of curtains which dropped from the edge of the frame carrying the lights.

The second form of bath which I had constructed soon after, consisted of a cabinet about eight feet in height. (Figs. 4 and 5) upon the inside of which were placed between fifty and sixty incandescent lights arranged in rows, the spaces between the rows of lights being filled with silvered glass so as to multiply the number of lights to an infinite number by reflection. The cabinet is so arranged that the whole body of the patient, including the head, can be exposed to the influence of the light, or the head can be excluded, as in the ordinary vapor bath. The cabinet is freely ventilated, and by means

of switches and a proper grouping of the lamps in wiring, the number of lights in use can be instantly and perfectly controlled. This bath, which I have had in use for more than three years, is somewhat imperfectly shown in a photograph that I herewith present. A description of this bath was published in a German medical journal by Dr. Gebhardt, who visited the Sanitarium and personally tested the bath something more than a year ago.

The third form of bath for general application of the incandescent light, which I have had constructed more recently, consists of a cabinet lined with mirrors (Fig. 6) and containing some sixty incandescent lights, so arranged that the patient lies in a horizontal position, the lights being placed on three sides. The patient lies upon a suitable couch with rollers, which is pushed entirely within the cabinet, or only so far as to expose such portions of the body as it is desired to bring under the influence of the radiant light and heat. By this plan the influence of the light can be confined to the feet and legs, or any other portion of the body up to the neck. It is only necessary to protect, by a sheet and a piece of mackintosh, any portion of the body which it is desired to exclude from the action of the bath.

I have also had constructed and have in use special appliances by means of which applications may be conveniently made to the spine, the trunk, the feet, and other parts of the body.

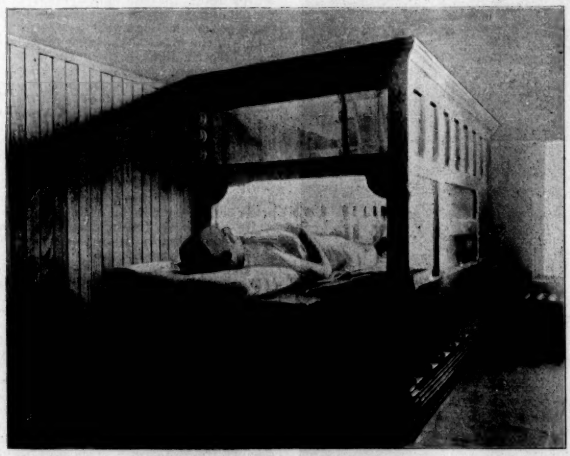

FIG. 6.—Horizontal Cabinet Electric Light Bath.

After nearly four years' use of the electric light bath in a great variety of ailments, I esteem it as of greater utility than any other means of applying heat to the body, with the exception of water, the universal applicability of which gives it paramount value over all other therapeutic agents which can be employed for this purpose.

In conclusion, I wish to acknowledge my indebtedness to Professor Gomberg, of the University of Michigan, who kindly consented to devote a part of his vacation to the tedious chemic work required by this investigation, and to my assistants, Drs. Rand and Paulsen, who assisted in the chemic work, and carried out the details of the experiments with great painstaking, and to Dr. Burleigh for careful studies of the blood in connection with the experiments.

DISCUSSION.

THE PRESIDENT said he was satisfied that in the therapeutics of light we are going to have very rich results.

DR. MASSEY asked what the effect had been when the application had been made to the whole body.

DR. KELLOGG answered that he had found that when applied locally, with a powerful light, it tanned the skin.

DR. DICKSON said that after the last meeting he had visited Dr. Kellogg's Sanitarium, and had personally experienced the effect of one of these electric light baths. In his own case, it was difficult with drugs to produce diaphoresis. He had been warned that the electric light bath produced diaphoresis at a lower temperature than a Turkish or a Russian bath, and he had only been in the bath for a very short time before he realized the truth of this statement. The sensation was decidedly pleasurable and very restful. The head of the person was not exposed directly to the full light. He was thoroughly convinced by this experience that the electric light did really produce diaphoresis at a lower temperature than the other baths.

DR. MORTON said he was very glad that Dr. Kellogg had brought this subject before the Association. We should all follow it up more carefully than heretofore. He wished to congratulate the author on his methods of study—his physiologic experiments—as it was in just this way in the study of the ashes of the human machine that we could get the information which we so greatly desired. He had himself used the electric light as a local bath for a number of years—that is, a single portable incandescent lamp wrapped in a wet towel and used as a poultice. He had found it a very useful means of applying moist heat to patients in our modern hotels. He had hoped to hear that there were effects from the electric light apart from the heating effects.

DR. GOELET asked what the effect of the light was upon the eyes.

DR. KELLOGG replied that the patient either closed the eyes or they were protected by a screen. The differences in the electric light bath from the Turkish and Russian baths might be attributed to the light, if one so desired. His statement on this point was purely theoretical, and it was quite possible that the very marked difference in the effect of the electric light bath might be due to the light and not to the heat. The quantity of perspiration was increased to double that by the Turkish bath for the same time. It was also noticeable that the surface temperature was higher than in the Turkish bath. The heating effects of the spectrum were included in a whole gamut of four octaves, whereas the light effects were in a comparatively small area. The blue and red rays were very active, as were also those above the visible end of the spectrum. The non-luminous rays below the red and above the violet were capable of producing photographs; and hence the therapeutic effects appeared to be due, not to the light but to the heat—at any rate, heat was a larger term and included light.

The Association adjourned at 6:15 P.M.

(To be continued.)

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SATURDAY, JUNE 22, 1895.

SEWAGE DISPOSAL ALONG THE GREAT LAKES.

In the report of the Chicago Health Department for 1894, recently issued, appears a tabulation of the claimed populations, reported deaths, and annual death rates per thousand, based thereon, of the sixteen cities of the United States having more than 200,000 inhabitants each. These embrace, in the order of lowest death rates per thousand of population, the following cities: Chicago, 15.24; Detroit, 15.49; Milwaukee, 15.71; Cleveland, 15.86; St. Louis, 16.13; Buffalo, 16.76; Pittsburg, 18.17; Philadelphia, 18.28; Cincinnati, 18.29; San Francisco, 18.85; Baltimore, 19.11; Brooklyn, 20.14; Washington, 20.23; New York, 21.03; Boston, 22.99; and New Orleans, 24.88.

The striking feature of this table is the group of cities lying on the shores of the Great Lakes—Chicago, Milwaukee, Detroit, Cleveland and Buffalo. The aggregate claimed population of the total sixteen cities is 9,934,058 and the aggregate of reported deaths is 185,632—an average mortality of 18.68 per thousand of population. But the five Great Lakes cities enumerated, with an aggregate population of 2,752,727, or nearly 28 per cent. of the total, reported only 42.830 deaths in 1894, which would give a mortality rate of 15.56 per thousand. This is nearly 22 per cent. less than the death rate of the remaining eleven cities, which is 19.88 per thousand. Without discussing at this time the credibility of these figures, it may be noted in passing that their compiler obviously anticipates that they will be challenged, and so says:

"An urban death rate and especially a Chicago death rate of less than 18 per thousand has been pronounced incredible by the highest statistical authority in the country, and it remains to be seen what the reply will now be to what Virchow would call the 'brute force' of these aggregate figures. The only recourse seems to be to charge the five Lake cities with a conspiracy of mingled suppression of death returns and exaggeration of population figures."

The point of present interest, however, lies in the fact that the cities with highest death rates from all causes, as shown by the table, have lower death rates from typhoid fever and the diarrheal diseases than has this wonderful group of Lake cities. Thus, the mortality from typhoid fever per 10,000 population for the past five years has averaged for New Orleans —with a general death rate of 24.88 per thousand in 1894—only 2.14 per 10,000 from typhoid fever; Boston—general death rate 22.99—3.26 from typhoid; New York—general death rate, 21.03—2.04 from typhoid; Brooklyn—general death rate, 20.14—1.9 from typhoid; Philadelphia—general death rate, 18.28—4.8 from typhoid fever. Or, comparing the aggregates of the two groups of cities, it appears that while the five Lake cities had an average annual death rate from all causes of only 15.56 per thousand as against a similar average for the five cities last above enumerated of 20.62 per thousand, they had 4.76 deaths per 10,000 from typhoid fever, as against only 2.83 typhoid-fever deaths per 10,000 in the five contrasted cities. In other words, while the general death rate was 24.5 per cent. less in the Lake cities, it was 40 per cent. higher from typhoid fever.

These figures, which—whatever their individual inaccuracies—are sufficiently large to generalize from, lend pertinence to the recent comments of a sanitary engineer on the discharge of sewage into the waters of the Great Lakes and into tide water.[1] In perhaps no other respect, says this writer, has the progress of sanitary engineering run more directly counter to the original popular notions in regard to sewage disposal than in the matter of the discharge of sewage and garbage into either tide water or the waters of the Great Lakes. "In the early days of the discussion of the sewage question in general, it was thought that any system by which sewers could be emptied into either of those classes of waters was, if not perfection, at least so near it that the difference was practically nothing. Tide water, especially along the seashore, was generally considered to be the ideal receptacle for cities and towns, the large body of water affected being so great that the degree of dilution was deemed sufficient to render the effects of contamination practically *nil;* and essentially the same assumption was employed to justify the use of the waters of the Great Lakes for the same purpose by the cities located along their shores."

Practical experience has demonstrated what science had already predicated upon the known laws of

[1] The Engineering Record, June 8, 1895.

diffusion, sedimentation and purification of polluted waters. The disposal of sewage in a water supply is a sanitary atrocity which future generations will refuse to condone. Sooner or later, if communities will not protect themselves from such a revolting violation of sanitary common sense, the general government must intervene and positively prohibit the discharge of untreated sewage or other pollution into any stream or body of water whatsoever. The figures herein cited are of themselves a sufficient argument for such intervention at once, but they lack the force they would have if promulgated by some authoritative body.

Let us have a Department of Public Health!

SOME PATHOLOGIC RELATIONS OF LUSCHKA'S TONSIL.

Mouth-breathing, imperfect development of the chest, anoxemia, general mal-nutrition and impaired intelligence are generally acknowledged, since the researches of W. MEYER, a quarter of a century ago, to be among the direct consequences of hypertrophy of the adenoid structure in the upper portion of the naso-pharnyx, just as truly as deafness and catarrh of the upper respiratory tract are also symptomatic of this condition. HARRISON ALLEN, in a short communication to the Pennsylvania State Medical Society (read May 22), has still further elucidated this subject by contributing the results of his recent pathologic and clinical observations. In addition to the classical form of obstructive disorder having its site in the pharyngeal tonsil, ALLEN recognizes two others, each of which have interesting clinical relations which are well worth attention and investigation. The three forms of adenoid disease of the pharnyx, in accordance with this classification, therefore, will be:

1. Hypertrophy, with mechanical obstruction to respiration.

2. Deformity of the bony walls of the naso-pharynx, causing the normal adenoid mass to obstruct nasal respiration; and

3. A non-obstructing growth in a capacious naso-pharynx, which acts, in some unknown manner, so as to seriously disturb the general health of the patient.

The first class is sufficiently familiar to clinical observers, and need not be dilated upon. In the second class, the interest lies not so much with the adenoid structure as with the abnormal conformation of the skull, which causes a small adenoid mass to obstruct a narrow, acutely-angulated naso-pharynx. The subjects of this are often micro-cephalic and cretinoid, and are frequently met with in institutions for the feeble-minded, although occasionally such patients are also seen in private practice. The condition is obvious upon inspection or digital exploration; the diagnosis is promptly made and the treatment is identical with the first class, avulsion of the greater part of the mass, and applications of astringents and detergents. E. FLETCHER INGALS, in an analysis of one hundred cases presenting hypertrophy of the pharyngeal or Luschka's tonsil,[1] expressed the opinion that in at least 90 per cent. of these cases the disease occurred in infancy or very early childhood, and he doubted very much whether the disease is ever developed after puberty. Some are probably congenital in origin and, in at least 10 per cent., it appears to be hereditary, several cases occurring in the same family. Improvement in intelligence and nutrition is very evident after operation, the patient often gaining 30 per cent. in weight within six months.

The third group deserves special consideration. It constitutes what ALLEN terms a veritable "adenoid disease." Here there are no symptoms of obstruction complained of, the vault of the pharynx is capacious and, after careful examination, no material increase of adenoid tissue can be discovered. The size of the mass, in truth, appears to be relatively unimportant; the fact that the mass itself is mischievous is of great importance in this class of patients. In view of the evident impairment of health in these cases,—and the gravity of the disorder is greatest in children on account of the lowering of vitality and defective development, amounting often to a veritable cachexia—ALLEN proposes the name of "adenoid disease" for this group. Indeed, such cases could scarcely, with propriety be called adenoid hypertrophy, because there is no hypertrophy, or, if it be present the moderate increase in size of the adenoid mass is relatively insignificant, existing as it usually does in a roomy naso-pharynx. In class second this peculiar condition may also exist, however, and, in a word, adenoid disease may or may not be associated with mechanical obstruction to breathing.

The novel and original suggestion of ALLEN, which makes this a decidedly valuable contribution to the pathology of new growths in the pharynx, is that there is a possible clinical relation existing between the pituitary body and the glandular mass lying immediately beneath it in the vault of the pharynx. In early life there is a canal through the base of the skull, which is a direct channel of communication between these two anatomic structures which, moreover, have many histologic features in common. It was suggested many years ago by OWEN that this canal and the pituitary body are a part of the remains of a primitive esophagus. The lower half of the pituitary body is largely composed of the same character of glandular and epithelial elements as

[1] The JOURNAL, Sept. 29, 1894.

constitute the mass of adenoid tissue to which reference has been made.

Recent investigations into akromegaly, giant growth, and various profound nutritive disorders, have shown them to be associated with increased growth of the pituitary body. Analogy would suggest that similar nutritive disturbances might follow adenoid disease of the naso-pharynx. In point of fact, ALLEN has reported several cases of this kind in which unexpected amelioration followed extirpation of the adenoid mass. The thought is suggested that even in typical cases of akromegaly, this simple operation might produce some change with possible improvement in the condition. For this application ALLEN is not to be held responsible, however, but the suggestion seems germane and especially noteworthy on account of the paucity of our therapeutic resources in this strange affection.

It is to be observed, on the other hand, that general treatment is often necessary. HOLBROOK CURTIS, of New York, last year reported a case of myxedema to the Section on Laryngology, in which it was noted that there was atrophy of the glandular tissues of the pharyngeal vault. Striking improvement in the mental condition and the general health of this patient followed the administration of a preparation of thyroid extract.[2]

In order to establish the pathologic and clinical relations of adenoid disease, it will be necessary, as opportunity offers, to make careful post-mortem observations of the brain and naso-pharynx. ALLEN suggests that in such examinations, the base of the skull embracing the membrane and outgrowth from the pharyngeal vault, the pituitary fossa and pituitary body, be removed as in a single piece, and this be prepared in the usual manner for microscopic examination. Together with this, the pineal gland should be preserved and examined. Such studies of the morbid anatomy of these cases may throw a flood of light upon the etiology of certain disorders apparently having their origin in this part of the body. Adenoid disease is allied to disease of other parts of the great lymph systems of the human organism and their special differentiations. It is necessary, therefore, to study it, as suggested by ALLEN, in the same careful manner as akromegaly, myxedema and allied affections have been investigated.

CONSERVATIVE GYNECOLOGY.

The late meeting of the American Gynecological Society had one very pleasant feature. Most gynecologic meetings of late years are so apt to be assemblages where exhibition of gory tumors and statistics of radical operations are made the subject of the leading discussions, that it does one good to report that the article which created the most enthusiasm was one read by DR. FERNAND HENROTIN, of Chicago, on a conservative method of treating inflammatory pelvic affections in their incipiency by a minor surgical procedure. This consists in making an incision behind the cervix as soon as the diagnosis is established, and penetrating the inflammatory focus with the finger, an iodoform gauze drain being inserted and left in place. Even after an illness of only six or seven days, the Doctor asserted, a pus cavity is usually found, and in twenty-seven cases so treated, no bad symptoms followed, and the patients recovered, all of them apparently cured, before the establishment of any of the destructive processes that generally lead to chronic invalidism and require laparotomy. While HENROTIN does not claim originality for making use of vaginal incisions, he pertinently points out the simplicity of his technique and particularly insists upon this procedure for the treatment of these diseases in their very beginning, that women may be treated and cured by simple and rational surgery before mutilating measures are necessary. He also reflects upon the value of this digital exploration of the inflamed organs in settling mooted questions in these troubles, the same as has been done in regard to appendicitis, chronic pelvic ailments, and many other diseases.

Time and experience will teach us whether these sanguine views are correct and reliable, but it is a hopeful sign to see our best gynecologists receive such conservative papers with pleasure and encouragement.

Regarding the treatment of chronic diseases by radical measures, it is doubtful if any advance, further than perfecting details will ever be made in the gynecology of the future, but in reviewing the field we must acknowledge that little has been done toward curing the poor woman who has just reached her couch of suffering with her first attack. The hot poultice, or the douche, or the drug does not seem to have materially lessened the number of our unfortunate sufferers, so that in retracing their footsteps back to the methods of the elder SIMPSON, and bending their energies to the development of conservative and prophylactic work, gynecologists are putting themselves in line with co-workers in other specialties and showing commendable scientific courage.

The specialist who will show us how to cure the pelvic sufferer without mutilation will, indeed, have reared a noble monument.

A SO-CALLED "AMERICAN QUACK" IN DUBLIN.

The *Medical Press and Circular*, June 5, pays editorial attention to a MRS. POTTS, MRS. DR. LONGSHORE POTTS, in fact, as a well-known "American quack." It appears that this lady has before now proffered her medical talents to the Irish sick, and on neither

[2] The JOURNAL, VOL. XXIII, page 486.

occasion has she reaped any great harvest. She belongs to the lecturing fraternity whose specialty is the reproductive organs. This lady also sells a "trumpet pessary" and bloweth her own horn in a fluent and rotund manner; she is a "brazen speaker," says the *Press*. "Lecturers there are who hail from America, and who seek to make their living by orating on public platforms about matters which modest people would avoid mentioning, are always confident and are certain to fetch a number of impressible women. Our object in noticing this particular quack is to say that the idea that she holds any medical qualifications recognizable in this country is entirely erroneous, and it is well that the public should be informed with some exactness as to the status of American colleges, lest other persons may gain credit in this country for qualifications which they do not possess. In the States there are no less than one hundred and fourteen medical colleges; some of them, such as Harvard, Yale, and the University of Pennsylvania, are of the highest repute, others mere disreputable diploma shops. Every one of these colleges can grant diplomas, but no person can practice on such qualification until he shall have also passed an examination held by the authorities of the State in which the diploma is granted by examiners appointed by the Executive. If he passes this State examination he can be registered, and may practice within the boundaries of that State, but he becomes an unqualified practitioner the moment he moves into another State, and must pass the examining authority which has jurisdiction in his new domicile.

As a sort of informal guarantee for the educational status of certain of these one hundred and fourteen colleges, an 'American Medical College Association' has been formed by the more reputable of them, and no college or university is admitted to membership of this Association unless both its courses of study and its examinations are up to standard. There are thirty colleges in this Association, of which the Female Medical College of Philadelphia, of which MRS. LONGSHORE POTTS says that she is an M.D., is *not* one. It is, in fact, a small proprietary diploma shop which few have ever heard of, and fewer still, even in America, take any notice of. From the report of the United States Commission on Education we find that the course which this college professes to require extends over three years, but only twenty-two weeks in each year, while the more reputable colleges require thirty-five or forty weeks. Its educational course would not pass muster in the very humblest qualifying body in the United Kingdom and, as for its examinations, 'the least said soonest mended.' What of that? It is not the first time that a quack succeeded in gathering in a few gulls and a certain number of fees. What is truly astonishing is that beside a number of ladies and ministers of religion, who do not count, PROFESSOR DOWDEN, DR. CHETWODE CRAWLEY, the LORD MAYORS of Dublin, Liverpool and Glasgow, and SIR HENRY IRVING are advertised as having appended their names to MRS. POTTS' manifesto. It is true that these gentlemen, who ought to have known better, testified to nothing more than the genuineness, of which they could have no personal knowledge, of certain testimonials of American gushers, and they expressed no opinion whatsoever as to the attainments of the lady or the propriety of her proceedings; but they must have known that their authority would be used as a guarantee for everything this quack said or did."

Bearing in mind that the above is written by a Londoner, it is about as correct as would be expected. The chief unfairness of the article was in the caption reading: "The Status of American Diplomates in this Country (England)," because it gives the impression that the cattle of the POTTS variety are of the class of diplomate type referred to. But let not that weary us—let us next send to the non-appreciative shores of Albion some of our surplusage of mind-healers, Christian scientists, bone-setters, cancer doctors, *et id omne genus*. Albion scarcely yet knows what America can do for her.

KENTUCKY STATE MEDICAL SOCIETY.

It is eminently fitting that the fortieth annual meeting of the Kentucky State Medical Society should have been held in the historic town of Harrodsburg—the oldest in the State. One of the largest meetings in its history was held there on the 12th, 13th and 14th of June, under the Presidency of DR. J. B. MARVIN, of Louisville. Within a few miles of there, in 1809, was born MCDOWELL, the father of ovariotomy. Harrodsburg, itself, is the birthplace of three of the society's honored members: DRS. JOHN G. CECIL, AP. MORGAN VANCE, and L. S. MCMURTRY.

DR. HENRY MILLER, now deceased, for many years an active and esteemed practitioner of Louisville, was born there, struggling in his early practice to make a success in his native town, afterward of national renown, and a President of the AMERICAN MEDICAL ASSOCIATION.

The society was welcomed on behalf of the citizens, by MR. BEN LEE HARDIN, in one of his characteristic speeches.

The reports of the officers showed the society to be in a most prosperous condition. Under the admirable rulings of the President, the papers were dispatched with much celerity, and the participants in the discussions held to their prescribed limit. A discussion upon diphtheria occupied the first of the first day's session. It was the sense of those participating in this discussion that the serum treatment of diphtheria was a valuable agent, and should not be withheld in the treatment of any case.

The second day, hernia was the special order for discussion, participated in by papers from Drs. Wm. L. Rodman, J. M. Foster, Geo. S. Davis, H. J. Cowan, W. C. Dugan, Ap. Morgan Vance and H. H. Grant.

The special order for the third day was obstetrics, with papers by Drs. A. D. Price, John G. Cecil, and David Barrow, to be discussed by Drs. J. M. Harwood, B. Logan Holmes, and H. Brown. Among the special subjects discussed was intestinal anastomosis, by Dr. Aug. Schachner and H. H. Grant. Dr. Grant exhibited a special clamp devised by him for lateral anastomosis and which had been used successfully in sixteen cases on the dog, and in one case on the human. Drs. Ray, Cowan and Dabney contributed articles upon the eye. Dr. Henry E. Tuley upon the newborn, and other valuable articles were read.

The State Board of Health met in regular session June 13, and during their session refused certificates to three men making application for license to practice in the State, holding diplomas from the Atlanta Medical College. These men had attended one unofficial spring course at another college, and upon promises from the Atlanta College the same year, attended a regular course there, and were duly graduated the next spring. The college had been notified twice to appear before the Board, but had failed to do so. The applicants had the sympathy of the Board, as they attended the school believing they could legally graduate in this time, but under the Kentucky laws the certificates had to be refused.

The society, by its president, appointed a committee of five members on public policy to coöperate with the State Board of Health in securing the passage of necessary laws looking to the public health. This is an important step, for all innovations by scientific bodies are looked upon with suspicion by the majority of laymen, and the indorsement of the State Board by this committee will increase its usefulness.

Another important act of the society was the resolution requesting the secretary to communicate with the American Medical Association, conveying the indorsement by the State Society of the efforts to obtain the appointment of a member of the Cabinet to look after the national health. It is believed that by the concerted indorsement of all State societies that such an appointment will be made.

During the session, the President of the American Public Health Association, Dr. William Bailey, on behalf of the Association, invited the State Society to be present at the meeting of the Association in Denver, October 1, 2 and 3.

Not the least entertaining of the whole session was the reception and banquet given the visiting physicians by the Mercer County Medical Society at the residence of Dr. A. D. Price, where they were the recipients of true Kentucky hospitality.

The morning of the last day, the nominating committee announced the selection of the following as officers for the ensuing year:

President, Dr. John Lewis, of Georgetown; Vice-President, Dr. H. H. Grant, of Louisville; Secretary, Dr. Steele Bailey, of Stanford.

Lebanon was chosen for the next place of meeting.

The Journal will publish an abstract of the proceedings next week.

DOCTOR MEDICINÆ CIVITATIS.

It is with pleasure that we note in the Annual Announcement of Rush Medical College of Chicago, the first step taken in this country to establish the post-graduate degree of Doctor Medicinæ Civitatis.

The degree of Doctor in State Medicine is not intended to be conferred as an empty honor or perfunctory gradus, but as an evidence of merit in study and acquirements.

The following is the portion of the announcement that mentions the matter:

DEGREE IN STATE MEDICINE.

1. The candidate must be a Doctor in Medicine, of not less than one year's standing.

2. The name of the candidate must have been on the matriculation book at least eight months before the examinations.[1]

3. The candidate must have completed, subsequent to registration, six months' practical instruction in a laboratory approved by the faculty, and also have studied, practically, outdoor sanitary work for four months, under an approved Officer of Health.

The examination (which will be rigid) to be passed by the candidate is prescribed as follows:

EXAMINATION FOR DIPLOMA IN STATE MEDICINE.

State Medicine and Hygiene.—Examination by paper. Time two hours. Causation and prevention of disease. Contagion in different Diseases; incubation period in each. Congenital Diseases and Malformations. Diseases of Animals in relation to the Health of Man. Diseases of the Vegetable Kingdom. Failure of Crops in relation to the Health of Man. Famine diseases. Injurious effects of unsuitable Food, bad Air, unwholesome Dwellings, unhealthy Trades. Causes of Origin and Spread of Epidemics. Effects of Climate on Health. Principles of Bacteriology. Character and Life History of the more important Pathogenic Micro-organisms. Quarantine, Disinfection, etc.

Chemistry.—Examination by paper and in laboratory. Time one and one-half hours. Air, Water and Articles of Food and Drink, including their Chemic and Microscopic Examination and Analysis. Chemico-geologic considerations affecting Water Supply. The Processes of Respiration and Combustion. Disinfectants and allied materials used for Deodorizing and the Treatment of Sewage. The Detection of Common Poisons and recognition of Injurious Pigments.

Physics and Meteorology.—Examination viva voce. Theory, Use and Exposure of Meteorologic Instruments; Measurements of Air Pressure; Draughts.

Engineering.—Examination by paper. Time one and one-half hours. Water Supply; Appliances for the Purification and Distribution of Water. House Drainage; Drains and Sewers; Ventilation and Flushing; Connections, Traps and Tests, Apparatus connected with the construction, fitting and use of Water Closets; Disposal of Sewage. Ventilation and Heating.

Morbid Anatomy.—Examination viva voce. Examination based on the method of conducting Post-mortem Examinations and the recognition of characteristic Pathologic Specimens.

Vital Statistics.—Examination by paper. Time one and one-half hours. Statistics of Births and Deaths; Birth rates and Death rates; their relation to Age, Sex, Occupation and

[1] This condition does not apply to those registered in 1895.

Density of Population; their value as measures of the Health of Communities. Population; Causes of Increase and Decrease of Population; Estimates of Population, and their relation to Births, Deaths and Migration. Construction of Tables of Vital Statistics.

Medical Jurisprudence.—Examination viva voce. Personal identity; Age, Sex. Medico-legal relations of Pregnancy and Parturition. Signs of Death; Wounds and other injuries; detection of Blood. The Commoner Poisons (not including their detection by Chemic Analysis).

Law.—Examination by paper. Time one and one-half hours. Greenleaf on Evidence. Public Health Acts of the United States, and of the State where candidate lives. Practice of Medicine Acts in the State where the candidate lives.

Candidates are requested to send in their names to the Registrar at least a week before the first day of examination. The examinations will begin February 1.

Other colleges will doubtless follow the example thus set, and there is little question but in a short time there will be educated Health Officers to supply all demands. The time has come when State Medicine must be recognized as a special department of medicine.

CORRESPONDENCE.

A New Evacuator.

DEXTER, IOWA, June 9, 1895.

To the Editor:—Having had occasion a few months since to use Bigelow's evacuator in doing the operation of litholapaxy, I discovered the instrument was sadly defective in the manner of the connection between the rubber bulb and the glass bulb for receiving the *débris;* it being made by securing the rim of the glass bulb to a metallic ring by means of plaster-of-Paris; this metallic ring being in turn adjusted to the metal connection of the lower end of the rubber bulb by means of a bayonet joint on one side only. After evacuating about half of the crushed stone from the bladder, I found that there was a large leak from the plaster-of-Paris joint, as well as a smaller one from the bayonet joint above. The leak increased so rapidly that in a few moments more the instrument became practically useless and I was compelled to leave the operation in this unfinished state. In looking the matter up, I found that other operators had met with a similar experience, an experience about as trying as could well be imagined.

I concluded that it was desirable to have an evacuator with this connection made of other material than plaster-of-Paris, which is excellent as long as the instrument is kept out of the water, but rapidly becomes loosened when in actual use. I, therefore, devised the connection below described and illustrated, which on subsequent actual use, I found to remain perfectly water- and air-tight, regardless of the amount of pressure put upon it in manipulating the rubber bulb. The improvement consists: 1, in having two bayonet joints, instead of one, for making the connection with the ring on the rubber bulb; 2, and this is most essential—making a section of the metal ring for receiving the glass bulb, and arranging for the closing of this section by means of a screw running parallel with the upper surface of the ring. Finally, in cutting on the lower inner surface of this ring, a deep groove to receive the flange of the glass bulb. Insert the glass bulb, remove the screw with a screw-driver, or similar instrument, spread the ring sufficiently to allow the flange to be received within the groove, adjust a soft rubber washer between the glass flange and the lower side of the groove, close the ring by means of the screw, and we have a perfectly tight joint that will not be affected by water. A second soft rubber washer is used between the metal ring of the rubber bulb, and the upper surface of the flange or glass bulb. The device was nicely made for me by Chas. Truax, Greene & Co., of Chicago.

M. G. SLOAN, M.D.

More than Fifty Years.

FULTON, N. Y., May 8, 1895.

To the Editor:—Referring to the letter of Dr. Colvin, of Clyde, N. Y., in the JOURNAL of May 4, I have to say that I have practiced fifty-four years—fifty-two years of married life—fifty years' residence in the same house.

I became a member of the Oswego County Medical Society in 1842. Attended fifty of its annual meetings in succession; a member of the New York State Medical Society in 1858, and a member of the AMERICAN MEDICAL ASSOCIATION ever since its second meeting in Philadelphia.

CHAS. G. BACON, M.D.

PUBLIC HEALTH.

Bacteria of Graveyard Soil.—Dr. E. H. Wilson, Bacteriologist of the Brooklyn City Board of Health, has submitted a report of his investigations on fragments of coffins sent him from some of the Brooklyn suburban cemeteries. He says, in substance, that while these fragments contain, as might be expected, a large variety of bacteria, no pathogenic varieties have been found; that the popular idea that all bacteria are dangerous is a totally erroneous one. The bacteria which are engaged in the process of destructive decomposition of the body are doing a beneficent work in returning to the soil the elements of which the body is composed, in a condition to be readily assimilated by the higher plants. Investigation has shown that the soil of graveyards contain no more bacteria in proportion than the soil of other places, especially below a certain depth. "In conclusion, I would say that while the presence of coffin fragments several years old is not to be commended from a bacteriologic point of view they are comparatively harmless, and only remind us more forcibly of the fact that it is the living and not the dead from whom we may expect harm in this matter."

To the Rescue of the Oyster.—After all the recent abuse of that "child of the rock and of the hoary sea," the oyster, as an infection-carrier and as a "scavenger of the sea" it will be consoling next September to recall the good words spoken for the bivalve at a recent séance of the Paris Academy of Medicine. M. Chatin stated that for some time he had pointed out the richness of oysters in bromin, iodin and fluorin. He wished now to make known the great quantity of phosphorus which oysters contain in an organic and, consequently, assimilable combination. The Portuguese oysters are the richest of all in phosphorus. Each of them contains very nearly one-twelfth of a grain of phosphorus; ordinary oysters have about one-third of this amount. These mollusks are equally rich in iron, their brown color being due to diatoms. A great number of infusoria on which the oysters feed are filled with these diatoms which are so rich in iron that the ash from burning them is of a deep red

color. M. Gautier remarked that all sea food is very rich in phosphorus in the organic state; thus cod-liver oil contains phospho-glyceric acid besides its alkaloid. M. Le Roy de Mericourt stated that he had a long time ago indicated the service rendered by oysters in the alimentation of persons attacked with chronic diarrhea in tropical countries.[1]

Septic Vaccine.—Dr. Gustav Fütterer, Professor of Physical Diagnosis in the Chicago Policlinic, communicates some rather alarming information concerning the vaccine points of commerce. With all necessary aseptic precautions on his own part, he finds on bacteriologic investigation at least one kind of microörganism present on every point examined. Some of these, it is true, are of little importance, but it will throw considerable light on the frequent untoward sequelæ of vaccination to learn that out of seventy-five points obtained from different sources and submitted to detailed examination fifty-five—or 73 per cent.—revealed the presence of pathogenic microörganisms, the streptococcus aureus, etc., and ten—or 13 per cent.—were infected with the streptococci of erysipelas and phlegmon. Dr. Fütterer announces[2] that he is at present, by experiment and practice, trying to answer the following questions: 1, which is the best way to disinfect these points and how may they be kept in an aseptic condition? 2, how should aseptic vaccine be kept and carried around for practical use? 3, how can septic vaccine be made aseptic and kept without impairing its properties as an effective vaccine medium? The last point must be well considered, since a vaccine that has been found to be aseptic once may not always be so and even if it is it can easily be contaminated by opening the bottle for use. It would certainly be safer if a disinfecting agent was added that would not only destroy the germs already contained in the vaccine fluid, but also those entering later.

A Board of Health Circular on Tuberculosis.—The Health Commissioner of Brooklyn, N. Y., Dr. Z. T. Emery, has drawn up the following circular for the guidance of the laity in respect of the questions of household sanitation that are constantly arising in every large city:

THE PREVENTION OF CONSUMPTION.

Consumption is a dangerous, infectious, communicable disease and can be prevented by simple and easy means of cleanliness on the part of those affected and those having the care of them. It is transmitted, in the vast majority of cases, from the sick to the healthy by means of the sputum or expectoration of those afflicted with the disease. *It should be remembered that the dangerous element is the expectoration of consumptives*, and that if this is destroyed before it becomes dry, little danger is to be feared. The expectoration should be received if the patient is confined to the house, into cups containing carbolic acid (1 part of the acid to 20 of water), or if the patient is up and about, on pieces of cloth which should be saved and burned at the first opportunity. This precaution is as necessary for the consumptive as for those about him, as many cases would get well if they would avoid reinfecting themselves. Consumptives should not spit on the sidewalks, or in public conveyances or in places of public congregation. Cases of consumption should be reported to the Health Department, not with a view of quarantining or otherwise interfering with them, but that the department may place in their hands simple instructions to prevent their communicating the disease to those around them and to assist in their own recovery. Apartments which have been occupied by consumptives should not be occupied by others until they have been renovated. They should be cleaned, scrubbed, whitewashed, painted or papered, as the case may be, before they are again occupied. Bedding, clothing, carpets, rugs, etc., used by consumptives should be disinfected, preferably by the Health Department.

A Russian Test of Vaccination.—The St. Petersburg correspondent of the London *Lancet* furnishes an abstract of a dissertation on smallpox and vaccination, presented to the St. Petersburg Academy of Medicine last year, which is interesting as much from the results set forth as from the rarity of Russian statistics on these subjects. The author, Dr. A. N. Sotin, was led to collect his statistics in the following manner: the *volost*, or subdistrict, of which he was in charge, lay in the western corner of the Mologa *uyezd* or district, in the government of Yaroslavl. Observing that an epidemic of smallpox was approaching from the East, Dr. Sotin personally examined every child under 14 years of age in his district before the disease arrived. The total number of children examined was 1,564, distributed among 665 families and in 30 villages. He found that 1,055 had been vaccinated and had visible scars; 75 children formed a second group of doubtful cases, which were said to have been vaccinated, but on which no scars were visible; and 434 had never been vaccinated. The smallpox arrived and a widespread, though not very fatal, epidemic resulted. It was then found that of the 1,055 "vaccinated" children only 16, or 1.3 per cent. had contracted the disease; of the 75 "doubtful" 35, or 46.6 per cent. suffered; while of the 434 "unvaccinated" children as many as 244, or 58.6 per cent., caught the disease. In other words, the unvaccinated suffered to an extent forty-five times as great as the vaccinated. Further, it was observed that in 189 families all the children were unvaccinated, and in these families if one child sickened with the smallpox the disease spread, with only seventeen exceptions, to every other child in the house. On the other hand, in houses where some children were vaccinated and others not, the disease always attacked the last and the first escaped. Dr. Sotin believes that there is no danger from vaccination performed during a smallpox epidemic, but that general vaccination will with certainty cut short an epidemic, and that the immunity following vaccination does not last more than eight years, at the end of which time re-vaccination is necessary.

Health Reports.—The following health reports have been received by the Supervising Surgeon-General M.-H. S.:

SMALLPOX—FOREIGN.

Argentine Republic: Buenos Ayres, March 1 to 31, 12 deaths.
Austria: Buda-Pesth, May 17 to 27, 7 cases, 1 death.
Belgium: Antwerp, May 13 to 18, 3 deaths; Brussels, May 18 to 25, 1 death.
Bohemia: Prague, May 18 to 25, 3 cases.
Brazil: Rio de Janeiro, May 4 to 18, 6 deaths.
Cuba: Havana, May 31 to June 6, 5 deaths.
Egypt: Cairo, May 6 to 13, 5 deaths.
England: Liverpool, May 25 to June 1, 2 cases.
Greece; Athens, January 15 to May 28, 147 cases, 23 deaths; Piræus, January 15 to May 28, 189 cases, 46 deaths.
India: Calcutta, April 27 to May 4, 98 deaths.
Ireland: Dublin, May 25 to June 1, 10 cases, 1 death.
Mexico: Nogales, June 1 to 8, 1 case.
Russia: Batoum, May 21 to 28, 17 cases, 1 death; Odessa, May 18 to 25, 6 cases, 1 death; Warsaw, April 18 to 25, 1 death.
Turkey: Constantinople, April 1 to 30, 62 deaths.
Uruguay: Montevideo, May 4 to 11, 1 case.

SMALLPOX—UNITED STATES.

Colorado: Pueblo, June 1 to 8, 1 case.
Illinois: Chicago, January 1 to April 30, 126 deaths.
Indiana: Evansville, June 14, 2 cases.
Louisiana: New Orleans, May 11 to 18, 8 deaths.
Michigan: Detroit, Battle Creek, Olivet, smallpox reported present June 1 to 8.
Missouri: St. Louis, May 1 to 31, 26 cases, 7 deaths; June 1 to 8, 3 cases, 1 death.
Pennsylvania: Philadelphia, June 1 to 8, 8 cases.
Ohio: Cincinnati, June 7 to 14, 4 cases.
Virginia: Lexington, June 14, 9 cases (none since May 26); Buena Vista, June 14, 8 cases (none since April 29); Lowmoor, June 14, smallpox cases reported: Staunton, April 28 to June 12, 105 cases, 5 deaths.
Wisconsin: Milwaukee, May 1 to 31, 19 cases, 1 death.
West Virginia: Wheeling, March 18 to June 15, 29 cases, 3 deaths.

CHOLERA.

Brazil: Rio de Janeiro, May 11 to 18, 1 death.
India: Calcutta, April 27 to May 4, 71 deaths.
Turkey: Constantinople, April 1 to 30, 24 deaths.

[1] Le Bulletin Medical, May 22, 1895.
[2] Chicago Medical Recorder, June, 1895.

YELLOW FEVER.

Brazil: Rio de Janeiro, May 4 to 18, 62 deaths; Santos, April 26 to May 3, 105 cases, 96 deaths.

Cuba: Havana, May 31 to June 6, 5 cases; Santiago de Cuba, June 1 to 8, 16 cases, 8 deaths.

Mexico: Mazatlan, May 20, yellow fever reported to be present; Vera Cruz, May 31 to June 6, 5 deaths.

CONSULATE OF THE UNITED STATES.

ATHENS, May 28, 1895.

I have the honor to report that since the appearance of smallpox in Athens and the Piræus, about the middle of January, there have been in all 336 cases; 189 in the Piræus, 147 in Athens. Of these, 249 had been recently vaccinated, and 37 in childhood. Sixty-nine deaths occurred, 23 in Athens and 46 in the Piræus. A large percentage of the deaths was of young children, or people of evil habits of life.

There are now 26 patients in the hospital at Piræus; 69 in that of Gondé near Athens. Only one or two cases have been heard of in the last two or three days. Much credit is due to the authorities for their thorough and scientific handling of the epidemic. I am, sir, your obedient servant,

GEORGE HORTON, United States Consul.

CONSULATE OF THE UNITED STATES.

NOGALES, SONORA, MEXICO, May 20, 1895.

I have the honor to inform you that reports are current in this vicinity, as well as in other portions of this State of Sonora, that at Mazatlan, a seaport city on the western side of Mexico (in the State of Sinaloa), yellow fever is now prevailing to a considerable extent, and that in some instances the disease has terminated fatally. It is also reported that there have recently been two cases of the disease at the city of Guaymas, another Mexican seaport (by rail, some two hundred and sixty miles south of Nogales). I have been unable to verify the reports in either instance, but I am apprehensive that they are not without some foundation. I am, Sir, your obedient servant,

FRANK W. ROBERTS, United States Consul.

RIO DE JANEIRO, May 21, 1895.

I have the honor to inclose report for the week ending May 18, 1895. There were 12 deaths from accesso pernicioso, an increase of 3; 30 from yellow fever, a decrease of 2; 4 from beriberi, a decrease of 3; 3 from enteric fever, a decrease of 1; 1 from measles, the same as in the foregoing week; 1 from cholera and 1 from cholerina, none in the previous week; 7 from choleriform diarrhea, an increase of 6; 1 from choleriform enteritis, and 1 from whooping cough, none in the previous week; 53 from consumption, an increase of 20. There were 358 deaths from all causes during the week, which is an increase of 32.

While there is really no disease reigning considered here as epidemic, yet great caution is needed where there are so many different kinds of contagious affections, though in very small numbers for the population.

Cholera. I am a little surprised that a case of cholera, or as they call it here, cholera morbus, should be reported, as the disease appears to be finished in the places of its first appearance, and it is almost unheard of here now, but as you will see by the report choleraic diseases still occur. The sanitary measures adopted for the ways of communication with the interior have been suspended as no longer necessary, but vigilance is still kept up.

Yellow fever. There is more of this disease here now than during the summer months, but the cases are scattered and it is now declining.

Plate River. Cholera has been officially declared extinct in Buenos Ayres, though cases appear in Montevideo. The authorities in those towns have declared the Brazilian ports —except Santos—free from suspected disease, but they still disinfect ships arriving from Brazil.

Respectfully yours,

R. CLEARY, M.D.
Sanitary Inspector M.-H. S.

CONSULATE OF THE UNITED STATES.

FOOCHOW, CHINA, April 30, 1895.

I have the honor to inform you that the disease known as the "Hong Kong Plague" has made its appearance in Foochow, and is already established as an epidemic. It is confined to the city of Foochow proper, most of the deaths from the disease occurring within the city walls near the eastern and western gates, respectively; but it is stated that several cases have occurred among the natives of a village situated on the Island of Nantai in the vicinity of the foreign settlement, though I am unable to say that the Nantai cases are real cases of the plague.

There is no question or doubt about the epidemic in the city being identical with that which last year caused such mortality in Hong Kong, and in Canton and other southern Chinese ports. The symptoms attending its appearance and progress unmistakably stamp it as the plague; and in the infected districts within the city the rats are dying in great numbers, just as has been the invariable rule wherever the plague has shown itself in the past.

The health of the port, in general, as respects natives and foreigners has been exceptionally bad this year. Some sporadic cases of cholera have already occurred; and it is possible that there will be suffering from an epidemic of cholera along with that caused by the plague.

In a city like Foochow it is impossible to institute any sort of sanitary measures to prevent the spread of contagious diseases, or to even mitigate the suffering of the victims. So, unless the present epidemic die out of its own accord, there is every prospect that misery and death will come to thousands of the one and a half millions of people living in the city proper and its immediate suburbs.

At an early date I shall report more fully upon the situation.

I have the honor to be, Sir,

Your obedient servant,

J. COURTNEY HIXSON, Consul.

NECROLOGY.

FRANK LYMAN FORSYTH, M.D., of Providence, R. I., May 11, 1895. He was the son of Dr. Francis Flint Forsyth, an eminent physician in Massachusetts, who was for many years one of the counsellors of the Massachusetts Medical Society. Both father and son were members of this society, the son being also a member of the Rhode Island Medical Society and the AMERICAN MEDICAL ASSOCIATION. He was born at Hampton, N. H., Feb. 13, 1854, and received his degree from the Harvard Medical College in 1877, after preparatory study at the Boston Latin School and the High School at Weymouth, Mass. An appointment was soon obtained at the Rhode Island Hospital where he remained one year. He supplemented his education at Harvard by a post-graduate course in 1891. His practice was large and successful and extended over a period of seventeen years, but his health began to fail nearly a year ago, and although the winter was spent in the South he passed away in eighteen days after his return. He was interested in several fraternities, was a member of the I. O. O. F., a past chief patriarch of Narragansett Encampment, and in 1887-88 was grand chancellor of the Grand Lodge of K. of P. of Rhode Island. He was a Mason in Nestell Lodge, No. 37, A. F. and A. M., and a member of Providence R. A. Chapter, Providence Council, R. and S. M., and St. John's Commandery, No. 1, K. T. From 1886 until 1890 he was grand secretary of the Grand Clan of Rhode Island, O. S. C., and in 1890 he was elected grand chieftain of that body. His widow survives him.

CALVIN TRUESDALE, M.D., of Rock Island, Ill., died June 9. Dr. Truesdale was born in Northern Ohio in October, 1822, and was consequently 73 years old. He graduated from the Western Reserve Medical College in 1845. After practicing some years in Ohio, he came to Rock Island in 1854, and continued in the practice of medicine there from that time till his last illness, a period of forty-one years, years which brought to him success in his profession and a competency, beside the respect of the community and public and professional honors. He was surgeon of the Rock Island division of the C., B. & Q. Railway, and one of the stockholders of the Rock Island Plow Company, beside being actively interested in the general welfare of the city of Rock Island. During his residence there he was twice elected mayor of Rock Island, and in 1872 was a candidate for Congress. He was spoken of a number of times later for like candidacy, being a man of acknowledged intellect and influence, and one whose loss will be mourned by many. He was married in Ohio in 1851, and

is survived by Mrs. Truesdale and their four children: William H. Truesdale, general manager of the Rock Island Railroad; Charles C., of Rock Island; Henry C., of Minneapolis, and Mrs. Jos. Gaskell, of Minneapolis. Religiously, Dr. Truesdale was a Presbyterian.

ARISTIDE AUGUSTE STANISLAUS VERNEUIL, M.D., of Paris, is reported by cablegram to have died on the 12th inst., aged 72 years. He was graduated in medicine at the age of 27. As a surgeon and writer on surgical subjects few French professors are better known to Americans than Verneuil. He was a contributor to Dr. Ashurst's "International Encyclopedia of Surgery," on the subject of constitutional states and traumatism. He was one of the editors of the *Revue de Chirurgie* and a frequent contributor to it and other surgical periodicals. One of his favorite studies of late years has been the influence of paludism in surgical conditions.

M. PALMER, M.D., of Monticello, Fla., June 3.——Charles D. McCraner, M.D., of St. Joseph, Mo., June 9.——R. O. Gercke, M.D., of Augusta, Ga., June 4, aged 52.——S. W. Parker, M.D., of Piqua, Ohio, June 9, aged 54.——S. M. Thompson, M.D., of Shelbyville, Tenn., May 28, aged 58.——Wm. B. Wallace, M.D., of New York City, June 7, aged 53. A. M. Wallace, of New York City, June 7, aged 27.—Henry Palmer, of Janesville, Wis.

SELECTIONS.

Distinction of Bacilli Typhi Abdominalis from Bacillus Coli Communis.—Marpman (*Centralblatt für Bakteriologie und Parasiterkunde*) adds decolorized pigments to the usual nutrient media. With agar and gelatin was mixed, in the proportion of 2 per cent., a 1 per cent. solution of fuchsin, decolorized by concentrated solution of sodium bi-sulphite. After the addition of aldehyd the red color reappears. In the place of fuchsin, malachite green was found more advantageous. In this mixture (after adding aldehyd) the cholera vibrio, the vibrio of Metschnikoff, bacillus liquefaciens, typhi murium and typhi abdominalis, were green, while spirillum rubrium, some micrococci, yeast forms and bacillus coli communis were colorless.—*Centralblatt für innere Medicin*, No. VI, Feb. 9, 1895.

Suppression of the Leucocytosis of Digestion in Ulcer and Carcinoma Ventriculi.—Schmeyer in *Internationale klin. Rundschau*. An increase of the white blood corpuscles after a meal has been noted by many. Only albuminous substances produce this. In the clinic of Professor Nothnagel, the blood of about thirty cases of carcinoma and ulcer of the stomach was examined with the Thoma-Zeiss apparatus. In all the carcinomata, eighteen, there was an absence of the leucocytosis of digestion; in the rest, three stenoses and seven cases of ulcer, examination showed the prompt appearance of the leucocytosis. A single case of chronic ulcer with marasmus showed no increase of leucocytes after a meal. The writer believes the cause in carcinoma to be a disturbance of the power of absorption, and of peptonization of albumin, and a disturbance in the lymphatic apparatus. In regard to the diagnostic import of these facts, he believes that the absence of the leucocytosis of digestion is not a sure indication of carcinoma, but its presence is strong against carcinoma.—*Centralblatt für innere Medicin*.

Metastatic Formation in Carcinoma of Ovarian Cysts.—Three cases of ovariotomy for carcinoma are described, in two of which the diagnosis of malignant tumor was made, in one benignant. All three died during convalescence in hospital. The examination showed, in all, cancerous degeneration of ovarian cysts, and metastases in the peritoneum. The existence of the metastases is to be traced either to direct implantation of broken-down portions of the tumor, or to a transformation of peritoneal endothelium into true tumor cells (only possible by direct contact with the tumor), or finally to an infection of the very small lymph spaces. The extension of the metastases differed according to the site. On the intestinal serosa were very small tubercles in a ring, following the course of the lymphatics and later embracing the gut like a coat of mail. In one case metastases had developed in the mucosa of the Fallopian tube, and appeared at intervals along its inner surface. In another case tumor cells were found in the lymph vessels of the tube. In conclusion, especial attention is drawn to the fact that, in primary carcinoma of the ovary, the corresponding tube should be closely examined for metastases.—*Centralblatt für Gynäkologie*, No. VI, Feb. 9, 1895.

Nephro-lithotomy by Abdominal Section.—Greiffenhagen (*v Langenbeck's Archiv*. Bd. XLVIII, Hft. 4) removed renal calculi by laparotomy, on account of very severe renal colic in two cases; the one a man of 68 years, the other a woman of 65. In both cases the kidney operated on was subsequently examined; one patient died of apoplexy five months later; in the other a movable kidney developed and caused such complaint that it was extirpated after seven months. In both, only a small fibrous cicatrix was found at the site of the incision into the kidney, and the renal tissue on either side showed comparatively slight changes which could not have interfered with the functional capacity of the organ. It must be mentioned that the final examination showed in both cases a calculus overlooked at the operation. From his experience the writer draws the following conclusions: the incision of the kidney must be, if possible, in the median line. If the calculi lie outside the median line in the parenchyma near the surface, the incisions must be made with due reference to the direction of the straight urinary tubules. Every incision into the kidney must be made under digital compression of the arterial supply, and must be at once closed by suture. Likewise all traumatic wounds of the kidney without lacerations should be immediately sutured. In order to prevent the artificial formation of a movable kidney, that organ must be firmly sutured to its normal position.—*Centralblatt für Chirurgie*.

MISCELLANY.

Change of Address.—Dr. W. Freudenthal from 1054 Lexington Avenue, New York City, to 943 Madison Avenue.

Dr. Thomas Osmond Summers, editor of the St. Louis *Clinique*, has been appointed Professor of Anatomy and Bacteriology at the St. Louis College of Physicians and Surgeons.

Obesity in Life Insurance.—A German writer has said that, from the point of view of the examiner for life insurance the obese man is like "a Colossus with feet of clay." It matters not whether the obesity be a family trait or a departure from heredity, the hazard is much the same, for the feet of clay are not competent to the physical exercise that makes for normal life and desirable risks.

Medical History of the Case of the late Secretary Gresham.—We shall present to our readers next week the clinical record of the case of the lamented Secretary of State, the Hon. Walter Q. Gresham, by his attending physician, Dr. W. W. Johnston. The publication of the official notes of this case will put at rest, forever we hope, some of the ill-natured criticisms that were made by the public press soon after the demise of the distinguished patient.

Another "Boom" for "Homeopathy."—Shahzada Nasrulla Khan, the hopeful scion of the royal house of Persia who has been perturbing all official and fashionable London by his disregard of the conventionalities, has decided not to take advantage of the Ameer's permission to remain in England until September—whereat there is much rejoicing among his perforce hosts. According to cable dispatches his deci-

sion is due to an encounter with various evil omens, including a wild ass at the Zoölogical Gardens which brayed without ceasing at his approach and refused to be comforted. *Similia similibus curantur.*

Thinking with the Finger Tips.—According to a writer in the *Arena* the coming man will assuredly perceive and think in every part, from his head down to his feet. He bases this assertion on what, he says, may not be so generally known—that recent post-mortem examinations of the bodies of the blind reveal that in the nerves at the end of the fingers well-defined cells of gray matter had formed, identical in substance and in cell formation with the gray matter of the brain. What, he asks, does this show? "That a man can think, not alone in his head, but all over his body, and especially in the great nerve centers like the solar plexus and the nerve ends on the palms of the hands and the soles of the feet."

Comparative Action of Cadmium and the Zinc Salts.—Athonasiu and Longlois have reported the results of their investigations of cadmium and the zinc salts to the Paris Biological Society. By the comparative study of the physiologic action of the sulphates of zinc and of cadmium on lactic fermentation and on higher organisms they have confirmed Richet's law that "metals of the same group act in accordance with their atomic weight." The cadmium salts are, at equal weight, more toxic than the zinc—Cd-112: Zn-65. Lactic fermentation is stopped by 2 per cent. of cadmium sulphate and 1.6 per cent. of zinc sulphate. The frog's heart is arrested with 0.105 of cadmium and 0.150 of zinc per kilo of the animal.[1]

Cattle Plague in Russia.—According to statistics published by the veterinary section of the Russian Ministry of the Interior, says Consul-General Karel in a dispatch dated St. Petersburg, March 23, 1895, the cattle plague (*Rinderseuche*) appeared in the northern Caucasus in January, 1895, causing a mortality of 375 head, distributed among the following districts: in the Kuban district, 134 head; in Ter district, 124; and in the government of Stovropol, 117. No case of the disease appeared in the interior of European Russia. On the other hand, the Siberian plague was brought into twenty-four governments of European Russia, and 232 head of cattle died in the following governments: in Samara, 60; in Astrakhan, 38; in Tula, 15; in Uralsk, 13; in Poltova and Penza, 11; in Kharkov and Kherson, 10. In the Caucasus, only 2 head of cattle died of the same disease—in the district of Ter.—U. S. *Consular Reports*, May, 1895.

Reflex Fatality after Intubation.—According to the report by Dr. Duran, of Barcelona, Spain, in a medical journal published in that city, sudden death may result from intubation of the larynx. "The patient was a girl about 3 years of age, brought to the hospital a few days after being attacked with pharyngeal diphtheria. The posterior portion of the mouth, the uvula and the fauces, as well as the nasal fossæ, were invaded by false membrane. Other treatment not succeeding, Aronson's antitoxin was administered, and as the blood showed a deficiency of oxygen, by evening the physician decided to perform intubation. His first attempt was not successful, but the second time the tube was introduced easily and without violence. For several minutes the child breathed more freely and fully, but suddenly the facial muscles contracted, the eyes opened widely, a slight convulsion occurred and death followed. Traction of the tongue, artificial respiration and ether injections were without avail, death having been instantaneous. The autopsy showed no lesion of the organs, and the fatal termination is attributed to cardiac syncope, due to a reflex originating in the larynx."

[1] Le Bulletin Medical, May 22, 1895.

Source of Error in Fehling's Test for Sugar.—Lafon reports the case of a woman who excreted 183 grams of sugar in twenty-four hours; the sugar disappeared after some months of treatment, and the patient had been taking medicinal doses of sulphonal (0.75 to 1 gram) for two months. In the urinalysis, after ingestion of sulphonal began, Lafon always found a decided precipitate of yellow oxid of copper by boiling with Fehling's solution, which, without any other precautions would indicate the presence of sugar. These same specimens of urine examined by the polariscope gave no deviation to the right, characteristic of diabetic sugar; but, on the contrary, turned slightly to the left almost inappreciably. Some twenty specimens of urine were examined and in all Fehling's solution clearly showed the supposed presence of diabetic sugar while none was present by the polariscopic test. The reaction of Fehling's solution is not due, at least in the majority of cases, to the products of the transformation of sulphonal in the economy, for the addition of a medicinal dose—1 gram per liter—to urine absolutely free from sugar gives exactly the same reaction. As sulphonal is somewhat largely used, this fact, which is not mentioned by any writer on the drug, is worthy of note.[1]

Physicians on the Canadian Border.—Consul Twitchell, of Kingston, Canada, writes to the Department March 27, 1895:

"I am informed through the public press—the information being verified by letter—that physicians living south of the Canadian boundary have recently been prohibited from attending patients living in Canada. I presume that the ostensible reason for this prohibition must be the alleged inferiority of the medical education of these practitioners and the consequent danger to the Canadian people. Of the professional competency of physicians on the American side of the border, I know but little, but the indifference of some of the State governments in the United States to the qualifications of their medical practitioners is in marked contrast with the action of the Province of Ontario. For a number of years the United States seems to have been the dumping ground for medical students who did not apply for or failed to pass the examination required to qualify them to practice in Ontario. If this matter were fully understood by our State governments, I have thought that the instinct of self-protection, combined with State and National pride, would cause them to require as high a standard of proficiency to practice medicine in their States as is required in Canada. During the year 1894, one hundred students graduated from the different medical colleges of Ontario. Of these, fifty-three passed the examination required by the medical council for the practice of medicine in Canada, leaving forty-seven unaccounted for. I think I can safely venture the opinion that if the passage of the examination of the medical council had been required to practice in the United States, forty-seven more medical students would have fitted themselves for the examination."—U. S. *Consular Reports*, May, 1895.

The Peabody Buildings of London.—From *Public Health* we learn the chief facts relative to the present workings of that notable benefaction, of the American-born banker, George Peabody, to the working people of London. The following is an abstract from the last annual report on the "Buildings": "From the report of the trustees for the year 1894, it appears that at the end of the preceding year the trustees had provided for the artisan and laboring poor of London 11,261 rooms besides bath-rooms, laundries and lavatories. These rooms comprised 5,073 separate dwellings, viz., 75 of 4 rooms, 1,783 of 3 rooms, 2,397 of 2 rooms, and 818 of 1 room. Since then 48 additional dwellings, containing 110 rooms, have been occupied, bringing the total to 5,121 dwellings, containing 11,371 rooms. The number of persons in residence on December 31 last was 19,918. The average weekly earnings of the head of each family in residence at the close of the year was £1 3s. 5d. The average rent of each dwelling was 4s. 9¼d. per week, and of each room 2s. 1¾d. The rent in all cases includes the free use of water, laundries, scul-

[1] Le Bulletin Medical, May 8, 1895.

leries, and bath-rooms. The birth rate for the year reached 36.3 per 1,000, which is 6.3 per 1,000 above that of all London for the same period. The death rate, including the deaths of 49 inhabitants of the buildings who were removed to hospitals, was 15.7 per 1,000, which is 2.0 per 1,000 below the average of London. The infant mortality was 102.1 in each 1,000 births, or 41.4 below that of London."

Precautions Concerning Consumptives' Homes.—The Paris correspondent of the *Press and Circular* refers to the following matter of governmental action in the location of institutions where tuberculous persons are aggregated: "The Minister of the Interior asked, some months ago, the Sanitary Committee of France its opinion on the rules to be followed in the establishing of a sanitarium for consumptives, and on the precautions to be taken to suppress the dangers of contagion to which establishments of this kind might expose the inhabitants of the immediate vicinity. The Committee replied that institutions like the above presented as great a benefit to society at large as to the patients; no danger could result from the presence of such an establishment in a neighborhood, provided that proper precautions were observed in their management; that a zone of cultivated land should surround the hospital so as to isolate it from any other habitation, and that the patients be forbidden to mix with the inhabitants of the region."

Sources of Infection in Nursing Children.—M. Marfan gives as his opinion that the first childhood reaches to the fifth year when the first four large molars appear. But the nursing period (first two years) and the first twenty days after birth are much more interesting. Infections, hetero- auto- and congenital, are especially easy and frequent then. For example: 1, in the first months of life, experimental pathology and clinical experience seem to show that infection of maternal origin is possible not only for syphilis (Roger and Parrot) but also for variola, measles, anthrax, pneumococcus, streptococcus and tubercle bacilli. Later experiments on variola, vaccinia, tetanus and diphtheria have shown that congenital immunity is still more frequent. Of short duration, the latter may nevertheless explain some of the differences in receptivity. 2, premature rupture of the membranes, infection by the umbilical cord and otitis, rhinitis, stomatitis, ophthalmia neonatorum, tetanus, puerperal infection, hemorrhagic septicemia. 3, natural lactation (rare), digestive disorders, pyemic disorders, suppurative peritonitis and parotitis (Budin, Quinquaud, Karlinski) may also confer immunity. Artificial lactation may communicate aphthæ, tuberculosis and especially scarlatina, typhoid fever and different saprogenic microbes which may more or less change the alimentary value of the milk. Defective alimentation either in quality or quantity predisposes to different intoxications or infections of intestinal origin, in which the different varieties of the bacillus coli communis play the most important rôle. 4, the germs of eruptive fevers, of mumps, whooping cough, grippe, diphtheria, pneumonia and tuberculosis generally gain access by the respiratory tract or the bucco-pharyngeal cavity. Many of these are rare in the nursling; tuberculosis is exceptional in the first three months, but very common in the second year. The infections of the respiratory tract may be primitive, or, on the contrary, follow disorders of the digestive system. 5, the integuments of the head, face and peri-anal region offer frequent sources of infection by the staphylococci or streptococci—impetigo, pustular folliculitis, multiple subcutaneous abscesses, localized gangrene. In concluding his very interesting article, Marfan justly remarks on the indefinite boundaries between the autogenic and heterogenic infections, insisting on the fact that certain microbes inhabiting the body cavities may in a sick patient acquire a virulent character and become new infections.[1]

Government Control of Anti-diphtheritic Serum.—Consul-General Mason, of Frankfort, under date of March 19, 1895, says:

"In view of the widely extended use of anti-diphtheritic serum in Germany, its high cost hitherto, the care and skill required for its proper preparation, and the danger which may result to patients from the use of adulterated or improperly prepared antitoxin, the Imperial Government has recently taken its manufacture and distribution under its control. A Government officer has been placed in charge of the antitoxin department of the Farbwerke at Hoechst, as well as the newly established laboratory at Berlin, and under the management of these officers, each dose of serum prepared for sale is inspected and sealed. Thus prepared, it is sold through the licensed apothecaries, who are all under strict official control, so that, in this country, the precautions against abuse of this important remedy are now practically complete. At the same time, the supply of diphtheria antitoxin has fully overtaken the home and foreign demand, and an important reduction has been made in its price. The opening of a new manufactory in Berlin, which, after somewhat slow and difficult preparation began in February to deliver acceptable serum for general use, has brought into effect the element of competition, and as a result of this and the organization of the whole process of manufacture on a practical industrial basis, the selling prices of standard serum have been reduced to less than one-third of its cost a month ago. Whereas the wholesale prices of Nos. 1, 2, and 3, of antitoxin in Germany previous to March 1 were, respectively, $1.42, $2.61 and $3.80 per vial or dose, the present market values for those numbers and the still weaker grade that is now made and used for prophylactic purposes, are as follows: No. 0, 18 cents; No. 1, 47 cents; No. 2, 83 cents; and No. 3, $1.25 per dose, and at these values it is invoiced for export to the United States. For the reasons above indicated, viz., the cost and difficulty of producing absolutely trustworthy serum and the uncertainty with which adulterations and falsifications of such material can be prevented and detected when its manufacture and sale are left open to general competition, the French Government has hitherto confined its preparation to one establishment—the Pasteur Institute, at Paris. . The recent action of theGerman authorities in placing its manufacture and sale under rigid official control would seem, therefore, to confirm a suggestion which may be of value to other countries. If the two nations in which diphtheria antitoxin was invented and has been most extensively produced, tested, and used, find it necessary to supervise so carefully its preparation and sale, a similarly discreet and cautious policy will probably be found advisable elsewhere."—*U. S. Consular Reports*, May, 1895.

Compensation of Experts in Criminal Cases.—Can an expert who testifies as such on behalf of the State in a criminal case demand, in the absence of a statute providing therefore, compensation in addition to the usual fees allowed witnesses in such cases? The question is one of some doubt, for the decisions of the courts of the different States upon it are very conflicting. Professor Rogers says, in his work on "Expert Testimony," that the cases are nearly balanced, and that the question must be regarded as still an open one, although the weight of authority rather inclines to the theory that the expert may be required to answer without additional compensation. Considerable importance, as well as interest, therefore, attaches to the decision of the question by the Supreme Court of Arkansas in the case of Flinn v. Prairie County, rendered Jan. 26, 1895, (29 S. W. Rep. 459), it being the first time that tribunal has ever directly passed upon the question. In the absence of a statute allowing it, the only compensation, beyond the usual witness fees, a physician who thus testifies can get, holds the Court, is that approbation which comes to all "who have done the State some service," and as the Arkansas statute makes no distinction between different classes of witnesses, it holds that under the statute a physician who testifies as an expert in a criminal case, is not entitled to extra compensation from the county.

It is the duty of every citizen, says the court, to assist, within reasonable limits, in enforcing the criminal law of the State; and it is not unreasonable that he should be required, on behalf of the State to give such information as he may possess toward the elucidation of any question arising

[1] Presse Medicale, Jan. 5, 1895.

in a criminal trial, whether that information be in the nature of expert evidence or not. He can not be required to make any examination, nor can he be compelled to attend the trial, and listen to the testimony, that he may be better enabled to give his opinion as an expert. For any service of this kind he may demand extra compensation. But such information as he already possesses, that is pertinent to the issue, he can be made to give, whether such information is peculiar to his trade or profession or not. There is very little probability of any great hardship being imposed on physicians by reason of this rule. The subpœnas for witnesses are under the control of the court, and, as there are physicians in almost any town or village in the State, it can not often be necessary for a court to compel one to attend beyond the limits of the county in which he practices, for the purpose of testifying as an expert, unless he is also a witness to other facts material in the case.

Insolation, in Parallel Columns.—A daily newspaper of our acquaintance contains, side by side, the treatment of sunstroke in a homeopathic and in a physiologic (*i. e.*, "regular") hospital. In order that our readers may have an opportunity to choose between the two methods, we print them below in parallel columns. That no feeling of prejudice may affect your choice we will not attach any name to either column. The spokesman in each case is the house surgeon, and his words have been modified only slightly and for the convenience of comparison solely.

HOW INSOLATION IS TREATED AT TWO HOSPITALS.

AT "A" HOSPITAL.	AT "B" HOSPITAL.
"Ice is the quickest and most effectual means of restoring a person suffering from insolation. We have a bath tub on wheels, filled with water, in which the patient is placed after being stripped of his clothing. Ice is packed around him and an ice cap is placed on his head. We keep careful watch and take the temperature frequently to prevent it from running down too low. When we get the temperature down to 103 or 104 degrees we put him on a bed protected by a rubber sheet and place over him a sheet wrung out in ice water. The ice cap is kept at his head and we rub him with lumps of ice until the temperature is brought down to normal. In mild cases we do not use the bath tub and ice pack, simply the ice-cold sheet and the rubbing with ice, and in some cases only the sheet. When the action of the heart is weak we use hypodermic injections of strychnin, digitalis, whisky or brandy. We do not resort to bleeding except in very extreme cases, nor do we use any internal medicines."	"The refrigerant treatment is carried out in an outer corridor on the first floor, where there is plenty of space for the air to circulate. A portable bath tub, half filled with water, is kept here. The water is at a temperature of 60 or 70 degrees, but can be brought down to ice-cold temperature in two or three minutes. When a patient suffering from insolation is brought in, he is laid in this tub, ice is put about him and a rubber ice pack is placed across his head and temples. When the heart action is very weak, hypodermic injections of nitro-glycerin are administered, and belladonna or glonoin is administered internally. Bleeding is sometimes resorted to, though rarely. A current of air is kept up by the use of fans. When the temperature of the patient has been brought down to normal, he is removed to a ward, when, for a time, to prevent a relapse, he is kept cool by means of the ice pack at the head."

One of the above surgeons, which one we will not say, volunteered a further remark, which can not be made to fit a parallel, and which will be readily understood by all our regular readers, to the effect that it would "never do to pack hot bottles about a man who is unconscious and whose temperature is 107 or 108 degrees. Ice is the only thing to be used and it is my belief that it would be of great avail in the treatment of cases of pneumonia and typhoid fever. Many physicians, however, are opposed to the treatment of such cases by resorting to ice-packing to reduce the temperature, probably because they fear it may not be properly used and therefore they resort to the application of internal medicines to reduce the heart action."

Indications and Contra-indications for Lavage of the Stomach.—At a late meeting of the Paris Therapeutical Society, M. Ferrand announced that he had communicated to the Hospitals Medical Society the case of a young girl attacked with hematemesis who died from peritonitis, and the necropsy showed not ulcer of the stomach, but some simple ulcerations on the prominent borders of the mucous folds. In that patient he had successfully used lavage of the stomach with an infusion of coca leaves. "This is my usual practice," he said, "for I see the advantages of slightly anesthetizing the gastric mucous membrane and, by leaving some of the liquid in the stomach, getting the benefit of absorption of a tonic and astringent agent. In ulcer of the stomach, on the contrary, lavage is dangerous, even when practiced between the attacks of hematemesis. The cold water used in lavage has been accused of producing tetany, but I have never seen any untoward effect from its use; moreover its action is most favorable. It lessens the irritability of the gastric mucous membrane and the tendency to vomit, and acts after the manner of hydro-therapy in general on the sensibility and innervation of the stomach. Exception must be made of those subjects naturally predisposed by their nervous condition and who are affected by it as by any other excitation. The treatment is not to be blamed in such cases but the temperament of the patient." M. Blondel believed that the nervous condition of certain patients was a contra-indication of gastric lavage, sometimes transient, but often serious. In a hysterical patient, with complex gastric symptoms and almost incoercible vomiting, he essayed lavage; as soon as the liquid reached the stomach, the patient lost consciousness and fell into a sort of somnambulistic state lasting two hours. On a second trial there was the same result, so the treatment was abandoned. The gastric crises and vomitings disappeared as if by magic after the vomiting up of a fine specimen of *Ascaris*. M. Ferrand in reply said that, like many physicians, he had also seen nervous symptoms almost amounting to hystero-epilepsy. In M. Blondel's case he saw a confirmation of his own remarks. Lavage of the stomach is a genuine minor operation, and when it is practiced for the first time, some precautions are necessary—have the subject reclining, etc. In M. Bardel's opinion gastric lavage is not always safe by any means. When the method was first introduced, Dujardin-Beaumetz and Debove had accidents. At the Hôpital St. Antoine, in the former's service the unfavorable cases were one in three. It has been abandoned in that service in tubercular cases, for lavage irritates the stomach so that the meal following is rejected. In such cases, Beaumetz made use of *gavage* with a catheter which is always well borne. In short, gastric lavage has been too much abused; the only genuine indication for it is the existence of putrid gastric fermentation with formation of toxins. In other conditions, M. Ferrand thought it was useless when it is not dangerous. M. de Cresantignes said there was another condition in which lavage gave undeniably good results. In dyspeptics with secretion of great quantities of mucus; the patients, who are hypopeptics or even apeptics, sometimes have a stomachal digestion nearly or quite *nil*, and it is impossible to relieve them without evacuating the mucus by lavage.[1]

Physicians can not Make Disclosures in Actions for Services.—The New York Code of Civil Procedure provides that "a person duly authorized to practice physic or surgery shall not be allowed to disclose any information which he acquired in attending a patient in a professional capacity and which was necessary to enable him to act in that capacity." In an action brought to recover for professional services rendered as a physician and surgeon, after the doctor had testified that he was a physician and surgeon, and as such was called upon by the defendant to treat him, he was asked to state what the defendant said to him about his physical affliction. This was objected to as incompetent and immaterial, upon the ground that the defendant, in making the statements to the witness, made them to a practicing physician in his professional capacity, and that they were necessary to enable the physician to act in that capacity, etc. The objection was overruled, and the witness was permitted to answer, giving an account of a secret disease disclosed by the defendant to him which he subsequently treated. But the general term of the Supreme Court holds (Van Allen v. Gordon, decided Dec. 27, 1894) that this was an error, and reverses the judgment of the lower court. It says that it can see no escape from the provisions of this section of the code. It does not understand that the defendant had in any manner waived its provisions. He was sued, and was brought into court without his consent

[1] Le Bulletin Medical, May 15, 1895.

and compelled to litigate a claim made against him for services rendered. It might be claimed that he was guilty of a breach of contract in refusing to pay the physician for his services, but that question could only be determined by a trial. If the physician made exorbitant charges, the defendant was not obliged to pay. And the same might be said with reference to the defendant's answer putting in issue the allegations of the complaint. Whether or not he properly interposed his defense could only be determined by the trial. Neither of these acts amounted to a waiver of the statute. Had the defendant himself brought an action against the physician, alleging misconduct or malpractice, he doubtless would be deemed to have waived the statute. But the interposing of a general denial in an action brought against him could not be so treated. It was further urged that if the physician was not permitted to describe the disease with which his patient was afflicted he could not show the value of his services, and that consequently it could not have been the intention to have the statute apply to a case like this. But the court thinks such a result does not necessarily follow. The physician could still testify to his employment, to the number of visits made, to the examinations, prescriptions and operations, and, if the defendant objected to his describing them, the physician might testify as to the value. It might be that it would be impossible to corroborate the physician's testimony as to the value of the services, for the reason that he would not be permitted to disclose to other physicians the character of the services rendered, but the defendant would meet the same embarrassment when he undertook to dispute the value of such services.

Hospital Notes.

WORK has been begun on the addition to St. Joseph's Hospital at Keokuk, Iowa. The improvements contemplated will double the capacity of the institution; estimated cost is $1,000.——The Evergreen Hospital Association of Leavenworth, Kan., has been incorporated with a capital stock of $30,000.——Subscriptions are being taken to erect a free hospital in Lower Allegheny, Pa.

Society Notes.

NU SIGMA NU.—The thirteenth biennial meeting of this society was held at Minneapolis June 3, 4 and 5. The following cities were represented: New York, Cincinnati, Detroit, Chicago, Pittsburg, Ann Arbor and Minneapolis. The program comprised one session each day, a general reception to visiting delegates, a visit to Lake Minnetonka, a surgical clinic by C. A. Wheaton, of St. Paul. A banquet was given by the Epsilon Chapter to the Grand Council June 3. Park Ritchie acted as toastmaster and G. A. Hendricks, of Minneapolis, delivered the address of welcome. The following were the toasts: Nu Sigma Nu, John L. Irwin, Detroit; Charter Members, W. J. Mayo, Rochester, Minn.; Initiates, A. J. Gillette, St. Paul; Our Future, F. W. Main, Jackson, Mich.; Our Profession, J. E. Moore, Minneapolis; The Successful Practitioner, J. F. Fulton, St. Paul; Wanderings, M. P. Vander Horck, Minneapolis; Alumni, C. A. Erdman, Minneapolis; Reveries, F. O. Dunsmoor, Minneapolis. The following officers were elected for the ensuing year: President, John L. Irwin, Detroit; Vice-President, James T. Christison, St. Paul; Secretary, W. J. Lyster, Detroit; Treasurer, J. F. Hasbrouck, New York; Historian, F. G. Stubbs, Chicago; Guard, Lawrence Shields, Cincinnati. The next meeting will be held in New York city.——The forty-ninth annual meeting of the Wisconsin State Medical Society was held June 19, 20 and 21 at West Superior, Wis. The meeting was a large one, and there were sixty-six papers on the program.

Washington Notes.

MEDICAL SOCIETY OF THE DISTRICT.—At the regular meeting of the society held on the 12th inst., Dr. W. C. Woodward read the essay of the evening, entitled "The Status of the Expert Witness." He recommended the passage of a law upon the subject. The paper brought forth a full and interesting discussion, and the proposed law was referred to the Committee on Legislation. Dr. H. L. E. Johnson read a full and exhaustive paper on the subject of "Atresia of the Cervical Canal after the Menopause." Appended to his paper was the bibliography of the subject to date. He also gave the history and presented the specimen which he removed that day, a degenerated cystic fibroma of uterus, with four large tumors attached, supposed to be round-celled sarcoma, and a fibroid of the right ovary of the uterus presented an atresia of the cervical canal. The patient died shortly after being placed in bed. The paper will appear shortly in the JOURNAL.

HEALTH OF THE DISTRICT.—The report of the Health Officer for the week ending June 8 is as follows: number of deaths: White, 81; colored, 77; total, 158. Death rate per 1,000 per annum, white, 22.95; colored, 45.97; total, 30.37.

THE MEDICAL DEPARTMENT OF GEORGETOWN UNIVERSITY has just made the most radical reform of its entire history—more radical than the change from a two to a three years' required course in 1878, or the change from a three to a four years' obligatory course in 1893. All future matriculates will be required to attend day lectures, and to avail themselves of the rapidly increasing clinical facilities of this city. It should be explained, however, that the school will rigidly carry out its contract with its present matriculates. But other improvements have been made, other than the raising of the school to the rank of a day school. Since the last announcement of the school was published, a Chair of Physical Diagnosis has been established. Separate professors of histology and pathology have been appointed; and additional laboratory opportunities in both of these branches have been provided. Arrangements have been made for thorough instruction in military medicine. Hereafter the course in materia medica and therapeutics will extend over three years—the first year being given to materia medica proper, and the second and third years to pharmacodynamics and therapeutics. All of the laboratories of the school, chemic, physiologic, bacteriologic, pharmacologic, histologic and pathologic, have been strengthened. The passage of the Anatomic Act by Congress last February, providing additional anatomic material, will furnish increased facilities for the practical study of anatomy. The friends of the Georgetown Medical School have reason to believe that the school has entered upon a renewed career, which will advance the study of scientific medicine, and will bring deserved reputation to her.

Philadelphia Notes.

THE UNIVERSITY OF PENNSYLVANIA observed Commencement week beginning with the Baccalaureate sermon June 9. The one hundred and twenty-ninth annual session of the medical department has just closed. The degree of Doctor in Medicine was conferred upon 250 graduates. The Valedictorian was Prof. Horatio C. Wood, and the address, in consequence, was virile and abounded in sound practical advice. The following extract embodying a reference to sectarian medicine will serve as an illustration of his original manner of dealing with old theories:

"In your therapeusis avoid all narrowness. There are 'isms and sects in medicine; there are alleged laws and routine systems of practice, but I adjure you that you rise above all such narrowness; that, recognizing that there is no general therapeutic law, you broaden your horizon until it is as wide as the universe; that you eagerly look for and appropriate any gems of value, though they should be hidden in the foulest dung-hill of charlatanism. Be not homeopaths, but lay fast hold of whatever of truth lies scattered among the falsities of its system; be not allopaths, but gather all you can in this field; call yourselves not hydropaths, but be not too proud to learn even of these fanatics; listen to the childish prattle of the Christian scientists, that perhaps you may catch one word of wisdom; do not disdain gleanings from the rubbish heap of Thompsonianism. These are narrow glens where men grope in perpetual twilight, ignorant of or, through very willfulness, refusing the light

beyond, but they often contain scattered bits of truth which are the birthright of every member of the medical profession who prefers to live his life in the open fields of rational medicine."

The suggestion contained in the following paragraph might be very profitably adopted by some of those who are not members of this year's graduating class:

"The discontent and nervous unrest of the American largely depends upon the teaching that men are born equal and that to labor is to succeed. It is not true. Genius is not, as has been asserted, the power of work, though the power of work may be necessary for the development of genius. I have watched some generations of young lives seek their level, rising and falling in the world, and have always found that it is the man who takes care of the moments who steadily climbs upward. The talent for finding work is necessary and good, but it must be supplemented by the talent for completing work. What the world wants is men who have the talent for getting things done."

A portrait of Prof. H. C. Wood was presented to the University by the Horatio C. Wood Medical Society, the presentation being made by J. Claxton Giddings. Judge Pennypacker accepted the gift on behalf of the Trustees. A portrait of the late Dr. William Goodell was presented, on behalf of his family, by Dr. John Ashhurst Jr., Barton Professor of Surgery and Professor of Clinical Surgery. It was received on behalf of the Trustees by Horace Howard Furness, Ph.D., LL.D.

A bust in bronze of the late Dr. Joseph Leidy, who for nearly forty years was Professor of Anatomy, Zoology and Comparative Anatomy in the Medical School, was presented by Dr. Harrison Allen and received by Mr. Walter George Smith, who said:

"The name of Joseph Leidy is world famous among men of science, and it is one of the glories of the University of Pennsylvania that he was her son. For half a century his name and work were associated with her. It is fitting, therefore, that this image of his strong and benevolent head should have its niche in her halls. On behalf of the Board of Trustees I am deputed to accept with grateful thanks this memorial of a man whose fame is her pride, whose works in science were so often carried on in her laboratories and lecture rooms, whose character has set its seal upon so many of her graduates. Such a man, even among the choice spirits whom it is the peculiar advantage of a seat of learning to gather from the common walks of life, is not often raised up to show by word and example the power of industry and genius. Let his career teach us a lesson that, short as is the span of earthly life, it suffices to work out some of the problems of nature, to learn something of the depths of the riches of the wisdom and of the knowledge of God, how incomprehensible are his judgments and how unsearchable are his ways.

"It has been finely said by a living English poet that human pleasures in almost all the relations of life, even the purest and most unselfish, are always mixed with pain, and therefore nature itself shows us that they are given rather for our discipline than for a complete satisfaction. But the study of nature herself is one of unmingled pleasure; none but the earnest and most encouraging emotions follow from the knowledge of her phenomena, whether they be sought in the animate or inanimate works of the Creator's hand. As we contemplate the results of Leidy's life and follow in imagination 'the patient search and vigil long' with which he gave himself over to the study of nature's mysteries, we may become better and more hopeful men. He truly said of himself that he knew a little of natural history, and proposed to teach others a little of that little. 'Gladly wolde he teche and gladly learne.' With the true spirit of true science the vastness of his acquirements made him more humble, for he knew that, however profound a knowledge he might attain to, he must ever stand confronted with mystery, mystery unsolvable by human effort alone. It is given to but few men to accomplish so much as he did; but it is given to every true man and true student to take up his allotted work in the same spirit of patience and of industry.

"Far away from the city of his birth, his life's work and his affection, there rises a mountain that lifts its head into the clouds, a noble monument of nature, and to that mountain has been given the name of Leidy. As it towers, a landmark among the forests and plains of the West, so will his fame stand out grand and beautiful in the minds of students who love nature and seek to find something pure and ennobling in the smallest, as in the greatest of her works."

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from June 8, 1895, to June 14, 1895.

Capt. CHARLES RICHARD, Asst. Surgeon, is granted leave of absence for three months, to take effect when he shall be relieved from his present duties, on or about June 30, 1895.

Capt. JAMES E. PILCHER, Asst. Surgeon, will be relieved from duty at Ft. Niagara, N. Y., upon the expiration of his present sick leave, and will report in person to the commanding officer, Columbus Bks., Ohio, for duty at that station.

Capt. LOUIS BRECHEMIN, Asst. Surgeon, will be relieved from duty at Columbus Bks., Ohio, upon the return from leave of absence of Major WILLIAM E. WATERS, Surgeon, and will proceed to, and take station at Baltimore, Md., as attending surgeon.

Capt. CHARLES RICHARD, Asst. Surgeon, is relieved from duty at the U. S. Military Prison, Ft. Leavenworth, Kan., to take effect June 30, 1895, and will proceed to comply with the order for him to take station at St. Louis, Mo.

Col. FRANCIS L. TOWN, Asst. Surgeon-General, is granted leave of absence for two months, to take effect about July 1, 1895.

Major LOUIS M. MAUS, Surgeon, is granted leave of absence for one month and twenty days, to take effect on or about Aug. 10, 1895.

Capt. EDWIN F. GARDNER, Asst. Surgeon, is relieved from duty as attending surgeon and examiner of recruits in Boston, Mass., and will report in person to Col. CHARLES H. ALDEN, Asst. Surgeon-General, president of the examining board appointed to meet in Washington, D. C., for examination by the board as to his fitness for promotion, and upon conclusion of his examination, will report for duty at Ft. Grant, Ariz.

Capt. JOSEPH T. CLARKE, Asst. Surgeon, is relieved from duty at Ft. Omaha, Neb., and ordered to Ft. Washakie, Wyo., for duty, relieving Capt. HENRY L. RAYMOND, Asst. Surgeon. Capt. RAYMOND, on being thus relieved, is ordered to Ft. Niagara, N. Y., for duty at that post.

Capt. PHILIP G. WALES, Asst. Surgeon, now on temporary duty at Ft. Niagara, N. Y., will, upon the arrival of Capt. RAYMOND at that post, return to his proper station.

Capt. WILLIAM J. WAKEMAN, Asst. Surgeon, will be relieved from duty at Ft. Thomas, Ky., upon the arrival there of Capt. ROBERT J. GIBSON, Asst. Surgeon, and will, upon the expiration of the leave of absence granted him, report for duty at Ft. Huachuca, Ariz.

Capt. HARRY O. PERLEY, Asst. Surgeon, will report in person to Col. CHARLES H. ALDEN, Asst. Surgeon-General, president of the examining board appointed to meet in Washington, D. C., at such time as he may be required by the board, for examination as to his fitness for promotion, and upon the conclusion of his examination, to return to his proper station.

Captain HARRY O. PERLEY, Asst. Surgeon, upon the completion of his examination for promotion, will proceed to Hot Springs, Ark., and take charge as commanding officer, of the Army and Navy General Hospital, relieving Lieut.-Col. ALFRED A. WOODHULL, Deputy Surgeon-General. Lieut.-Col. WOODHULL, on being thus relieved, will report in person to the Commanding General, Dept. of the Colorado, for duty as Medical Director of that Department, relieving Lieut.-Col. DAVID L. HUNTINGTON, Deputy Surgeon-General. Lieut.-Col. HUNTINGTON, on being thus relieved, will report in person to the Surgeon-General for duty in charge of the Museum and Library Division of the Surgeon-General's Office, relieving Lieut.-Col. JOHN S BILLINGS, Deputy Surgeon-General.

PROMOTIONS.

To be Asst. Surgeons with the rank of Captain after five years' service, June 6, 1895: First Lieut. FRANK R. KEEFER, Asst. Surgeon; First Lieut. THOMAS U. RAYMOND, Asst. Surgeon; First Lieut. HENRY D. SNYDER, Asst. Surgeon; First Lieut. ALLEN M. SMITH, Asst. Surgeon; First Lieut. ASHTON B. HEYL, Asst. Surgeon; First Lieut. JOSEPH T. CLARKE, Asst. Surgeon.

LETTERS RECEIVED.

Abbott & O'Brien, St. Paul, Minn.; Alta Pharmacal Co., St. Louis, Mo.; Atkinson, W. B., Philadelphia, Pa.

Bagley, E. C., Sparta, Wis.; Ballantyne, Wm., & Sons, Washington, D. C.; Bell, Clark, New York, N. Y.; Bleyer, W. E., Cincinnati, Ohio; Brown, Bedford, Alexandria, Va.; Burroughs, Wellcome & Co., London, Eng.

Culbertson, J. C., Cincinnati, Ohio; Cannaday, Chas. G., Roanoke, Va.; Columbia Chemical Co. (2) Washington, D. C.; Cleary, W. P., New York, N. Y.

Doyle, G., Syracuse, N. Y.; Diller, Theodore, Pittsburg, Pa.; de Schweinitz, E. A., Washington, D. C.; Durgin, S. H., Boston, Mass.; Danbury Medical Printing Co., Danbury, Conn.

Eskridge, J. T. Denver, Colo.

Fairfile, H. B., Chicago, Ill.; Fuller's, C. H., Adv. Agency, Chicago, Ill.; Fawcett, C. C., Stewartsville, Minn.

Gillette, Wm. J., Toledo, Ohio; Goff, J. W., Harleysville, Pa.

Hummel, C. C., Mechanicsburg, Pa.; Hartley, Henry, Philadelphia, Pa.; Haine, W. J., West Farmington, Ohio; Hummel, A. L., (4) Philadelphia, Pa.

Kinyoun, J. J., Washington, D. C.

Larrick, G. W., Middletown, Va.; Lincoln, D. F., Brooklyn, N. Y.

Manuf'rs Adv'g Bureau, New York, N. Y.; Mouser, S. M., San Francisco, Cal.

Nelers, O. C., New Palestine, Ind.

Purvis, C. J., (2) Utica, N. Y.

Regensburger, A. E., San Francisco, Cal.; Raub, J. F., Washington, D. C.; Reeves, James E., Chattanooga, Tenn.; Reed & Carnrick, (2) New York, N. Y.

Small, E. H., Pittsburg, Pa.; Stoner, G. W., Baltimore, Md.; Sayre, R. H., New York, N. Y.; Strong, T. D., Westfield, N. Y.; Scribner's, Chas. Sons, New York, N. Y.; Schafer, Geo. H., & Co., Chicago, Ill.; Stearns, F., & Co., Detroit, Mich.

Thayer, C. P., Boston, Mass.; Tyson, James, Philadelphia, Pa.; Thompson, C., New York, N. Y.

Wellington, G. G., Chicago, Ill.; Woodbridge, J. E., Youngstown, Ohio; Wishard, W. N., Indianapolis, Ind.; Wall, H. J., Milwaukee, Wis.; Warner, W. R., & Co., Philadelphia, Pa.